371.3
TRI

2479
21.3.75

£1.50

EDUCATION IN EUROPE

Section I HIGHER EDUCATION AND RESEARCH

I–1 *Engineering Education* (1963).
I–2 *The Teaching of Chemistry at University Level* (1966).
I–3 *Structure of University Staff* (1966).
I–4 *How to Qualify as a "Biologist" in the Universities of Europe* (1967).
I–5 *The Teaching of Physics at University Level* (1967).
I–6 *The Teaching of Geography at University Level* (1969).
I–7 *The Teaching of Economics at University Level* (1970).

Section II GENERAL AND TECHNICAL EDUCATION

II–1 *Primary and Secondary Education: Modern Trends and Common Problems* (1963).
II–2 *Civics and European Education at the Primary and Secondary Level* (1963).
II–3 *Pupil Guidance: Facts and Problems* (1964).
II–4 *Teacher Training* (1965).
II–5 *School Systems: A Guide* (1965).
II–6 *Introducing Europe to Senior Pupils* (1966).
II–7 *The Observation and Guidance Period* (1967).
II–8 *History Teaching and History Textbook Revision* (1967).
II–9 *Geography Teaching and the Revision of Geography Textbooks and Atlases* (1967).
II–10 *The Educational Aspects of Examinations* (1968).
II–11 *The Place of History in Secondary Teaching* (1970).

Section III OUT-OF-SCHOOL EDUCATION AND YOUTH

III–1 *Youth and Development Aid* (1963).
III–2 *Physical Education and Sport: a Handbook* (1964).
III–3 *Training the Trainer* (2nd edition revised and supplemented, 1966).
III–4 *Leisure-time Facilities for Young People from 13 to 25 Years of Age* (1965).
III–5 *Workers in Adult Education: Their Status, Recruitment, and Professional Training* (1966).

Section IV GENERAL (SUBJECTS OTHER THAN THOSE INCLUDED IN SECTIONS I, II, and III,—e.g., MODERN LANGUAGE TEACHING, FILM AND TELEVISION, etc.)

- IV–1 *Recent Developments in Modern Language Teaching* (1964).
- IV–2 *New Trends in Linguistic Research* (1963).
- IV–3 *Research and Techniques for the Benefit of Modern Language Teaching* (1964).
- IV–4 *Modern Language Teaching by Television* (1965).
- IV–5 *Educational and Cultural Films: Experiments in European Co-Production* (1965).
- IV–6 *Europe's Guests: Students and Trainees* (1966).
- IV–7 *Art of the Cinema in Ten European Countries* (1967).
- IV–8 *The Use of Short 8mm. Films in European Schools* (1967).
- IV–9 *Direct Teaching by Television* (1967).

These are on sale at the sales agents of the Council of Europe listed at the end of this book.

Each volume is published in English and in French. The French edition of the present work is entitled *L'Enseignement de la géographie au niveau universitaire*

COUNCIL FOR CULTURAL
CO-OPERATION OF THE
COUNCIL OF EUROPE

EDUCATION IN EUROPE
Section 1 – Higher Education and Research – No. 6

The Teaching of Geography at University Level

by

J. TRICART
Professor in the Faculty of Letters and
Human Sciences at the University of Strasbourg

S.C.E.R.T., West Bengal
Library
Calcutta
25/3, B. C. Road

GEORGE G. HARRAP & CO. LTD
London · Toronto · Wellington · Sydney

First published in Great Britain 1969
by GEORGE G. HARRAP & CO. LTD
182 High Holborn, London, W.C.1

© *Council of Europe* 1969

All rights reserved. No part of this publication may be reproduced in any form or by any means without the prior permission of George G. Harrap & Co. Ltd

SBN 245 59753 0

T., West Bengal
21-3-75
2479

371·3
TRI

Composed in Times type and printed by
W. & J. Mackay & Co Ltd, Chatham, Kent
Made in Great Britain

Foreword

The series of publications *Education in Europe* was launched by the Council for Cultural Co-operation of the Council of Europe in 1963 in order to make known the comparative studies and surveys produced under its twenty-nation programme of educational co-operation.

The Council of Europe was established by ten nations on May 5th, 1949, since when its membership has progressively increased to eighteen. Its aim is "to achieve a greater unity between its members for the purpose of safeguarding and realizing the ideals and principles which are their common heritage and facilitating their economic and social progress". This aim is pursued by discussion of questions of common concern and by agreements and common action in economic, social, cultural, scientific, legal, and administrative matters.

The Council for Cultural Co-operation was set up by the Committee of Ministers of the Council of Europe on January 1st, 1962, to draw up proposals for the cultural policy of the Council of Europe, to co-ordinate and give effect to the over-all cultural programme of the organization, and to allocate the resources of the Cultural Fund. It is assisted by three permanent committees of senior officials: for higher education and research (this committee also includes representatives of universities), for general and technical education, and for out-of-school education. All the member Governments of the Council of Europe, together with Spain and the Holy See, which have acceded to the European Cultural Convention, are represented on these bodies.

Between 1963 and 1967 some 25 titles have been published in English and French versions under the responsibility of the Council of Europe. A list of these titles and of the Council's sales agents may be obtained from the Publications Section, Council of Europe, 67 Strasbourg, France. In addition a number of reports of a more technical nature on educational and cultural problems have been produced in a separate series from 1965 onwards.

The Council of Europe ceded the world rights relating to the series *Education in Europe* as from January 1st, 1968, to George G. Harrap & Co. Ltd, London, for the English edition and to Armand

Colin, Paris, for the French edition. Henceforth these publishers will be responsible throughout the world for the production, sale, and distribution of all studies published in the series, which is divided into four sections:

I. Higher Education and Research (education at university level).
II. General and Technical Education (primary and secondary—including technical, commercial, and vocational—education).
III. Out-of-school Education and Youth (youth activities; adult education; physical education, sport, and outdoor pursuits).
IV. General (subjects other than those included in the three sections mentioned above).

The more technical reports will continue to be published in Strasbourg.

The opinions expressed in all these studies are not to be regarded as reflecting the policy of individual Governments or of the Committee of Ministers of the Council of Europe.

Preface

The current development of the discipline of geography on the one hand and its importance at university level[1] for the training of numerous secondary-school teachers on the other lend particular interest to the work done in the field of geography by the Committee of Higher Education and Research of the Council for Cultural Co-operation. The activities of this Committee are directed towards the establishment of "material equivalences" (qualitative comparability) in respect of the training provided in the different disciplines of the universities of member states.[2]

Professor Tricart's report is presented in the form in which it was unanimously adopted at the meeting held in Strasbourg from the 6th to the 8th of March, 1967, by the experts in physical and human geography representing the academic authorities of the member countries of the Council.

The list of experts is given in Appendix 1.

The experts on the same occasion formulated a series of recommendations set forth in Appendix 2.

---

[1] Attention is drawn to the work of the Committee for General and Technical Education on the teaching of geography at the primary and secondary levels.

[2] For reference see the publications on chemistry and biology, Series I–2 and 4, *Education in Europe*.

Contents

Introduction 11
Presentation of the Report 14
Definition of a Basic Level of University Education 17
Special Problems in the Teaching of Geography at University Level 33
Criteria to be considered in comparing the Effectiveness of Basic Training in Geography 46
Comparative Study 49
Tables 78
General Conclusions 101
Appendices
  1 Meeting of Experts 107
  2 Recommendations 109

Introduction

Our terms of reference were the following: To undertake "a comparative study of the present state, including current trends, of the teaching of geography in European universities (universities and similar institutions of higher education in member countries of the Council for Cultural Co-operation). The study should include, *inter alia*, a description of the syllabuses, stressing those aspects which will be important in the establishment of a possible 'material equivalence' in the training provided (study programmes, educational guidance, and material matters in the strict sense of the term—such as staff, equipment, etc.) and also suggestions as to desirable future developments. This study should enable duly designated experts to establish criteria which would be applied to the teaching of geography in European universities."

These terms of reference were thus very extensive, implying a critical study of the present state of the subject, together with a long-range assessment.

Geography is, today, at a turning-point. Considerable progress in methodology has been made in most of its branches during the last thirty years. However, the diversity of university structures, the differences in the qualifications of staffs recruited, and the many disparities in working conditions have all militated against the broad adoption of new concepts. These concepts are still too confined to the countries in which they are being developed.

These are conditions peculiar to the discipline itself. There are, in addition, the abrupt changes which all universities are undergoing, precipitated by the tremendous development of scientific research and the unprecedentedly large increase in the number of students. These general conditions have hampered the dissemination of the new concepts of geography, as in most universities the most pressing needs have claimed priority. Efforts have been directed towards expanding existing facilities without altering them completely. Quality has been sacrificed to quantity. The usefulness of this survey has been shown by the interest it has aroused. Our colleagues have received us with great kindness on the all too few visits we have made. A very large number of them have patiently and punctually completed an extremely long questionnaire. It is thanks to their support that we have been able to compile this study. We earnestly hope that, despite its shortcomings, it will be useful to them, and to the cause of the discipline to which we are devoted, for we believe in its usefulness, its training and civic value, and in its application to the wellbeing of the community.

The special situation of geography, a discipline which is seeking to find its rightful place in education, has invested this survey with dimensions and complexities we had little suspected. Despite our efforts we are fully aware of the inadequacy of the present study. We visited as many universities as we could, and we made the maximum use of the replies with which we were provided.

The conditions under which geography is being taught in universities today are, however, of unparalleled complexity. Even the faculties to which it is attached vary from one country to another; they even vary within universities in the same country! There are countries where the discipline is not even taught as such, but merely figures as bits and pieces which form an additional subject for degrees in other disciplines. Important changes are, however, taking place. We have taken them into account as far as possible, but owing to lack of time we were unable to visit those universities concerned either before or after the introduction of these reforms. To have done so effectively we should have had to spend all the time allotted to us for the survey. Unfortunately we had to divide our time between the study and our own already heavy normal work. This fact especially impeded our contacts with our colleagues since they could be made only during the academic year. The geographer is engaged in his field work during the period called the 'vacation'. It was precisely during this time that our freedom of movement was most reduced because of our own teaching duties and the administration of the Centre for Applied Geography in Strasbourg (Centre de Géographie Appliquée). Many of the imperfections in the text to be found farther on result from the interpretations of replies to the questionnaires. It would have been possible to eliminate them had we been able to revisit the country or the university concerned and obtain the agreement of our colleagues on that part of our report which concerned them. This we were able to do in very few cases. The more the situation varies in the universities the greater the imperfections. Despite the care we took, the questionnaires could not be made entirely appropriate for each particular case. Few of our colleagues have had the time to write additional notes to overcome this difficulty. In some cases they had themselves to interpret our questions, and we had, on occasion, to interpret their replies! This is the principal source of the shortcomings which even personal contacts were not always able to remedy.

We would, therefore, ask our colleagues to be kind enough to forgive any inaccuracies that appear in this report, which, we believe, have been reduced to the minimum thanks to the meeting of the experts held from the 6th to the 8th of March, 1967. We only hope that it has contributed to clearing the ground and illustrating the incredible complexity of the present situation of geography in the universities in Europe—a complexity which is not limited to Europe, but is to be found elsewhere, notably in the United States and in Canada.

Finally, having been given the opportunity, through the task with which we were entrusted, we have adopted a frankly critical and forward-looking attitude. We have deemed it best to stress the shortcomings and deficiencies rather than confine ourselves to anodyne and unfruitful observations that lead nowhere. We believe that European geographers are on the whole sufficiently mature to agree that the deficiencies should be emphasized. Criticism alone ensures progress. Complacency is the worst danger which besets us. We desire our criticism to be constructive in order to provoke a wide discussion and an awareness of our problems, which will benefit our discipline and render to society that service which is the duty of science.

Presentation of the Report

The standpoint from which this study has been conducted is set out in the Introduction.

We have at the outset endeavoured to define the teaching of geography at university level in accordance with our terms of reference and to establish the general context of the inquiry. This definition, which corresponds to the average situation to be found in the advanced countries, will be fully appreciated when compared with the concepts and actual standard of teaching in those institutions which describe themselves as universities in, for example, some developing countries. We believe that this definition will be useful not only because a growing number of these countries are looking towards Europe, an ancient seat of culture, and expect from her the help they need in order to make up leeway, but also because in Europe itself the huge and unprecedented increase in the number of students may lead to the adoption of dangerous palliatives. The increased access to learning resulting from higher living standards or development needs must not turn universities from their necessary and true aims by any dilution of the teaching at university level. Admission to the universities must not be granted to the vast numbers of students, eager for knowledge, by lowering the universities to the level of secondary schools. This would be trickery, pure and simple, which would call in question the very existence of the universities. The danger is real. It is the direct consequence of those governments which, for demagogic reasons, would like to open up the universities to unlimited numbers, without permitting those universities the opportunity of re-thinking their teaching policy or aims, and without providing the considerable means necessary for maintaining the quality and level of teaching to increased numbers.

We subsequently examined the particular case of geography within this general context. We have endeavoured to show how our discipline is in a period of rapid change, which implies considerable disparities between universities. The situation is nowhere perfect; a group of leaders has, however, established itself as the advance-guard of enlightened change. It is to them that one should look. He who would elevate himself should look forward to increasing his efforts and not contemplate complacently the path he has trodden. In combining the best of these different examples of progress we have tried to outline what the discipline of geography should be in our time, and thus to define the aim or, even better, to indicate the direction in which the evolution of our very society itself is moving. At the present time a discipline cannot make any progress on its own. The considerable sums needed for its expansion, as well as the inevitable interdisciplinary work, require that it should contribute something to other research workers, scholars, and society itself. We have, therefore, attempted to outline these aims. They should serve as principles underlying the policy of university teaching from the beginning. We believe we have thus fulfilled the obligation placed upon us, to establish the criteria which can serve as a guide for the teaching of geography in European universities.

The following chapter contains a comprehensive review of the subject, bringing out the common factors in groups of countries or universities. We have endeavoured to make the maximum use of comparative tables. This involves many difficulties, especially in the case of those countries which do not have a unified university system (for example, Switzerland, Great Britain, Germany), and results in the facts being presented somewhat summarily. Nevertheless the main characteristics emerge, showing on the one hand those countries with rigid structures such as France or Italy, which are particularly unwieldy, especially in times of sudden change, and on the other those countries where the system allows students a wider choice, whether advised or not by their professors (for example, Germany, Turkey, and generally in Switzerland). It is also necessary to distinguish between those countries where no specialized training exists (Greece, some Swiss universities, and Italy) and those where, on the contrary, geography is the centre of a specialized training in association with related disciplines, satisfying to its rôle as a meeting-point, or, again, a semi-specialized training combined exclusively with another discipline which takes up a great deal of the timetable (France). These few examples are far from presenting the full range of the incredibly varied situations. At least this characteristic, peculiar to geography, has, we feel, been brought to light.

Lastly, the final pages deal with long-range prospects. Like the constructive criticism made during the course of the study and the occasional suggestions which accompany it, these conclusions reflect the personal views of the *rapporteur* who has chosen freely from amongst the opinions expressed by his colleagues. We have, however, thought it best to avail ourselves of the complete freedom so generously accorded us to express opinions leading to discussion rather than confine ourselves to a purely technical statement leading to nothing (see the Preface). The text, with certain minor modifications, has since been unanimously approved by the experts, who expressed themselves, also unanimously, in favour of the suggestions set out in this report.

Definition of a Basic Level of University Education

Two approaches to the task entrusted to us were possible:

To take as a starting-point the administrative definitions accepted in each country of those institutions of higher education which are so designated.

To evolve, in the light of current experience in the developed countries, a definition of standards in higher education, to examine its particular implication in the case of geography, and to compare the actual situation in the various establishments of higher education in relation to these standards.

We opted for the second. Actually, our inquiry started by taking as a criterion the administrative definition current in each country. It revealed those considerable differences in the concepts and levels of teaching which must be fully revealed if our study is to be effective. We thus thought it necessary to define a basic level of higher education for submission to experts with a view to its becoming a European standard. It will consequently be easier to compare the actual situations existing in the different countries. The situation is, indeed, nowhere perfect. It varies to a greater or lesser degree depending on the establishment. Such a standard could provide an objective perfectly capable of achievement. Its recognition would encourage efforts everywhere to improve the present situation. Such a standard definition would of itself constitute a positive action capable of mobilizing the forces of goodwill.

In defining this standard the experience of all the countries has been drawn upon and an endeavour made to extract the most useful elements, capable of transposition.

A guiding concept was necessary to evolve a co-ordinated and structured system. It was at this level that the *rapporteur* was able to exercise his own judgment. This, nevertheless, has largely been based on the opinions of his colleagues and those appearing in the very varied works published both by university teachers and non-university men (which is important).

(1) THE AIMS OF BASIC HIGHER EDUCATION

Higher education is intended for selected young adults from about nineteen years of age. There is no country in which full-time compulsory education includes any part of this age group. Higher education, in consequence, is intended generally for a voluntary élite selected on the basis of their previous studies, usually at the secondary level. In some countries, such as Belgium, candidates with an equivalent education are also accepted—those, for example, who have completed studies which qualify them to be primary-school teachers. In most countries, however, a secondary-school certificate is required for admission to higher education. In a number of countries there are exceptions to this rule; this is, however, uncommon.

Because of its recruitment higher education is dependent on the education at the secondary stage. Consequently the standard of the students is determined by the quality of the latter. The basic knowledge acquired, and especially the intellectual training given at the secondary level, determines the aptitude of the student for higher education. There are considerable differences among countries in respect of the teaching of geography at secondary level. There are countries in Europe where it is never taught by specialists. There are others, unaware of the significance of modern geography, where its value is not realized, where the subject is considered as of secondary importance; it appears in the syllabus only incidentally. Its instruction is entrusted to staff without the requisite specialized training, such as teachers of literature, mathematicians, philosophers, historians, linguists, etc., as in Italy or in some cases in French-speaking Switzerland. In certain countries students proceeding to higher education are almost entirely ignorant of present-day geography. Serious disparities also exist in other disciplines from one country to another. They do not, however, appear to be so pronounced. The reason is that the discipline of geography has undergone a complete reform in the last thirty years. The deficiencies existing at the secondary level are reflected in higher education to a much greater degree than is the case in the more traditional specialization.

In principle, then, higher education is designed for an élite who have successfully completed their studies at the secondary level. At the present time, however, in all European countries there is real pressure on secondary schools, entry to which has been made easy by all Governments. The development in communications, the increase in the standards of living, and the various social measures have greatly increased the intake of schools and colleges. In the developing countries a veritable *mystique* often develops: it is thought that a son who has successfully completed his secondary studies can emigrate more easily and under better conditions. Immediately after the War in countries like Germany, France, Great Britain, and later in Italy, Spain, and Turkey, the same thing happened with reference to university education. The change has been less abrupt in Sweden, which remained outside the conflict, and where for long a high standard of living has been enjoyed, or in Switzerland, where higher education is often very expensive. The movement has, however, been general in Europe, differing only in degree and time. This tendency has given rise to certain precautionary measures. The increase in numbers at the secondary level, which few Governments have faced methodically, has too often been accompanied by a lowering of standards to a greater or lesser degree. The reasons are various—improvised measures for the recruitment of teachers, as in France, inadequacy of public funds, hesitation to adjust the teaching system to the increased intake, etc. These general conditions have had a serious impact on those disciplines, such as geography, which are subject to rapid change. The authorities have had to meet the most urgent needs and have neglected the special problems of geography at a time when they were particularly urgent. The shortage of premises and equipment has not made it easy to provide the essential, specialized rooms and teaching equipment. The shortage of teachers has led to the teaching of geography by staff without the requisite training, unable to appreciate the fundamental changes through which the discipline is passing, and hence retaining outmoded concepts and methods of teaching.

The lowering of the secondary level and the immense number of candidates for higher education have provoked the universities into taking protective measures, especially in those countries where the flow to education has been heaviest. This is particularly the case in France and Turkey, much less so in Sweden and in Switzerland. Two devices have been adopted, depending on the country concerned:

The introduction of an entrance examination, based necessarily on the secondary-level studies, by which the candidates are selected. This raises serious difficulties in the case of geography, since there is often little relationship between the treatment of the discipline at the secondary level and that which is or should be in higher education. The selection may, therefore, be inadequate.

The creation of an intermediate level between secondary and higher education by means of a preparatory year, even two years, at the university, such as the former *Propédeutique* in France and the *Candidature* in Belgium. Such transition courses are not easy to organize, and further add to the length of higher education. They are often of a somewhat hybrid nature, not clearly defined, as can be seen in the case of France (where a reform has just been enacted).

In the countries, however, where no such measures have been taken the situation is perhaps less satisfactory. The rôle of higher education tends to be, in fact, that of the secondary level in that it provides students with the basic knowledge necessary to proceed to higher education.

A real crisis in admission to higher education can be said to exist, the more marked in disciplines such as geography which are developing rapidly. The situation is such that a part of the effort of basic higher education has perforce to be assigned to catching up on the defects of secondary education. The time available for true higher education is reduced accordingly, whereas it should, in fact, be extended to allow students to absorb concepts of an ever-increasing complexity. A period of about five years should be considered necessary for basic higher education; any appreciably lesser period would rob higher education of its real character.

Higher education should not be defined mainly in terms of the numbers it takes in, but of the aims it should attain in order to fulfil its rôle, which is to provide those services which society demands of it and of which it has such a pressing need.

The aim of higher education is to provide society with managerial and executive staff. With rare exceptions, those directing the Civil Service and business have had a higher education, as have those on whom scientific and technological progress depends. In nearly all European countries these administrators have been trained in universities, or in the corresponding technical colleges (*Technische Hochschulen*) in the Germanic countries. It is only in France that the universities, accorded little freedom by a centralizing administration, have not been entrusted with the training of engineers.

In the field of geography a university training provides the staff for two kinds of profession—teachers at the secondary level and administrative and executive staff in the public and private sectors. At the secondary level teachers are responsible for introducing the pupils to their subject. This implies that the former have assimilated and are sufficiently steeped in their discipline to be able to impart it and make it understood, and not merely to hand out to the pupils ready-made facts. In all the advanced European countries secondary-school teachers are trained in universities, and these institutions initiate them into the essential discipline of their subject, often including an introduction to research (in France the *Diplôme des Etudes Supérieures*, in Belgium the *Mémoire de Licence*, etc.). Students must have completed their basic training in higher education before receiving additional professional training in the form of teacher training. In certain countries, such as Italy, this is provided in the university itself (*Facultés de Magistère*); in other countries this training is given outside. We shall not deal with this subject in this report.

The teaching of geography was, and unfortunately still is in certain countries, for long limited to that given to secondary-school teachers. Too often the studies are still organized on the basis of this particular profession, as in Italy and in French-speaking Switzerland. This is a serious situation; it hinders progress and tends to conserve outworn conceptions. The other opportunities for those with a university training in geography are rapidly increasing; for example, in the U.S.S.R., the United States, Germany, and Sweden. The need to organize space daily becomes greater with the ever-increasing growth of the human race. We should exploit more the resources we possess, taking account of the complex balances involved, the study of which is proper to geography. The cost of the spatial organization factor must enter into costs either in a free economy such as that of the United States, where it is integrated in the factors which control competition, or in that of a socialist economy such as that of the U.S.S.R., where its importance, after some neglect, is suddenly being realized. The diversity of the geographical environment must be taken account of in planning if waste is to be avoided. Regional development is in the forefront everywhere today, as much for economic as for pressing social reasons. People wish to have a better life, to enjoy pleasanter surroundings, and to be able to devote more time to leisure. A rational and co-ordinated modelling of space is a growing necessity and is becoming an accepted fact. The rôle of the geographer is now to modify actual conditions, including that of geography itself, and to cease the mere passive purveying of facts. Applied geography is now with us, whether it is so called or whether it goes under the name of 'voluntary' or 'active' geography. Those responsible for

S.C.E.R.T., West Bengal
Date 21-3-75
Acc. No. 2479
371.3
TRI
S.C.E.R.T., West Bengal
Library

economic and political affairs, the town planners, the economists—indeed, all those whose activities are connected with space—need the help of the geographer even if they are not aware of it. There are still many who make use of geography without realizing it and who could be more effective if they did. They could then call upon the services of competent specialists and avoid exploring facts already established.

The aims of basic higher education in geography are thus changing fast. Geography has now reached a degree of development and maturity enabling it to make a vigorous contribution to the development of society and has passed that stage where it merely formed part of general culture. Like many other scientific disciplines, geography must no longer be content to train secondary-school teachers; it is vital—and it will become increasingly so—to train professional geographers. In the United States, as in the U.S.S.R., the number of geography graduates turning to other careers exceeds those going into the teaching profession. The same trend is inevitable in Europe, and will be even more rapid because of a slower start.

If the discipline is not to be paralysed the teaching of geography at the level of higher education should not therefore be directed exclusively towards the training of the traditional secondary-school teachers. A more extensive and more methodological training is called for—a training which, supplemented by teaching instruction, can lead eventually either to teaching at university level, or to highly specialized research, or to practical applications such as the development and conservation of national resources, regional development, town and country planning, or co-operation with the various administration departments in Government service and with other disciplines similarly engaged. All this implies a full and active involvement in the science of geography, a mastery of its concepts and methods, requisites not always required for teachers at the secondary level. In this sense the development of applied geography healthily provides openings other than in teaching. Applied geography places geography in direct contact with realities which prevent it from slipping into intellectual complacency and academic isolation. It has created the conditions for rapid progress and requires in return a complete adjustment of the basic university training, which runs counter to established traditions, to the resistance of existing structures, and occasionally to lethargy among the authorities themselves. It should be emphasized that this change, which is far from being achieved in all the European countries, is also advantageous to secondary education. It is the very condition which will ensure the training of good teachers, who in following the development of their discipline are better able to communicate its full importance to adolescents and to give it its true place in education—namely, a modern form of humanism.

Let us then examine the basic training required to meet such developments.

(2) GUIDANCE REQUIRED FROM BASIC TRAINING

In order to satisfy the need for key personnel which society requires the university to provide, the basic training of a higher education should furnish students with a comprehensive view of the concepts of the discipline, its fundamental data and methods. This should be assimilated, not merely learned passively, and actually practised by the student. He must reach the stage of intellectual independence, and must be able to make critical judgments of his own and use his initiative. Once the basic training has been acquired, the student should be able to apply with discernment the methods he has been taught, either to establish teaching methods or to undertake research, or to provide the bases for practical decisions.

We may thus lay down the standards of basic higher education. The requirements are threefold:

(*a*) *Preparatory Training for Students' Personal Work*

It is rare for secondary education to produce adequate results in this area. Its teaching is not generally of an active nature. Because of its encyclopaedic character its efforts are necessarily limited. It takes much longer to learn how to learn than to teach a discipline considered to be complete. Where students have undertaken practical work at the secondary level they are better prepared for work at university level. The fact nevertheless remains that specialized and more advanced studies require considerable preparatory training for personal work in higher education.

When teaching fails to allow for the preparatory training for personal work it cannot truly be called a higher education. It will be incapable of enabling students to acquire that intellectual independence which is its prime objective. This, unfortunately, is the case in some countries. There real higher education in geography cannot be said to exist, or, if it does, it is inadequate. This is an essential and fundamental point to be considered when assessing the equivalence of university studies.

At the true university level the preparatory training for personal work is carried out by means of these exercises: First, practical work, which consists of providing the students with documents and asking them to study them and draw conclusions which illustrate or supplement the concepts treated in the courses or in the textbooks. The students should be guided in this kind of exercise, so that they may acquire the techniques necessary to make use of these documents and be able to put their observations into practice. They should be divided into small groups and allowed a continuing dialogue between them and their director. A figure of twenty-five per group is a maximum if these exercises are to be fully effective; otherwise they develop into lectures, making a dialogue impossible. The student follows the lectures more or less passively, loses considerable time in understanding their object, and assimilates them less effectively. The standard of teaching suffers accordingly. It is desirable that this practical work should be integrated as far as possible in the rest of the teaching, notably in lectures, which thus become less theoretical, leading to a complete assimilation of the discipline. We consider that the standard and organization of the practical work, its place in the examinations, and its integration in the studies are most important factors in the assessment of the value and quality of higher education.

Secondly, reading should be so designed that the student himself can carry out his own research on a given problem. At university level a student must learn to obtain his own documentation, to find the sources of information, and to be able to make use of bibliographical material. He will be in a position thereafter to work independently whatever his profession may be. It is this training which will enable him to keep up to date after leaving the university; in other words, he will subject himself to continuous re-training which is essential to the teacher, the researcher, or the expert. This reading should be directed; it must also be supervised and tested by examinations. To that end all the questions set in those examinations should not be treated by the professors in courses. The student himself should be responsible for obtaining his own documentation on part of the examination syllabus. This is the recognized system in countries which provide a proper university training. Naturally, the part of the syllabus for which students are themselves responsible varies from one university to another, but it would appear that the figure of 25 per cent is the optimum. These lectures also provide an opportunity for teamwork. Under the supervision of a professional assistant they can form the subject of a seminar, in which the task is divided, reports are drawn up, and discussion initiated. The teaching thus becomes more lively and produces better results.

Thirdly, papers, read by a student before his fellow-students and the professor or his assistant, which are the subject of subsequent criticism and discussion. This particular form of exercise has different names. In France it is called the students' lecture and is given in the first year of university. Generally this paper lasts about half an hour. In Germany, at a higher level, they are known as seminars proper and treat matters which have been the subject of research conducted under the supervision of the professor himself. They are not mere lectures, but attempts at a synthesis of a more or less extensive subject, the scope of which is generally narrowed down as the student becomes more concerned with research.

(*b*) *Methodological Training*

This training is already a major factor in the preceding exercises, but it is acquired particularly in the course of certain activities. For the geographer this methodological training is especially complex because of the peculiar nature of the discipline, at the hinge between the natural and the human sciences. The student must know how to ally absolute precision to a requisite sublety and interpretation. Geographical facts do not lend themselves to mathematical exactness, although statistics are essential for their understanding and analysis. Geographical facts are also concrete and directly observable. They must be inspected *in situ*. With some exceptions they cannot be reproduced in the laboratory. They are complex, too. They rarely exist separately; on the contrary, they are usually dovetailed and intermingled with those of other disciplines. Geography involves a constant dialectical variation between analysis and synthesis. It cannot be limited to analysis or synthesis alone without the risk of losing contact with both and oversimplifying the basic data.

Geography is, therefore, an especially complex discipline. It is not to be understood immediately. The geographer matures over a long period. Inspiration, which occasionally comes to the mathematician, is unknown to the geographer.

This slow maturing is part of the definition of basic higher education; without it the teacher at the secondary level is limited to imparting facts without providing an understanding of them, of no greater value than the consultation of a year-book or a dictionary. It constitutes an essential part of the researcher's training; without it one remains a technician applying given formulas, never attaining a full geographical understanding; without it there is no practical application, nor can complex groups which have not been intimately understood and whose mechanisms are unknown be influenced.

How can such an experience be obtained during the period of basic higher education?

(*c*) *Practical Training*

Practical work and the papers read in discussions are an essential method which allows more direct and active assimilation than mere listening to lectures, however brilliant they may be. Such exercises enable the student to become steeped in the very complexity of the facts, to examine them from different angles, and to correlate them. Lectures provide a view of the problems. They show how to approach the study, they provide a clue and demonstrate the method to be applied, but they remain, nevertheless, external; they are merely accepted.

But field work is far more important. It must be the basis of the geographer's training; it is irreplaceable, despite the undoubted teaching value of slides and films in the illustration of courses. Like teaching given in the lecture-room, field work should incorporate a combination of exercises designed on the one hand to bring out demonstrable facts, and on the other to teach the students to observe for themselves. Conducted travel, organized for a group not exceeding the number recommended for practical-work groups, corresponds more to the former of these exercises. Field-work camps or training periods where the students remain at least one or two weeks in the same region and learn to study its different aspects by themselves. carrying out surveys and investigations, meet the requirements of practical training still more effectively. The two types of exercises should be combined in the training of qualified geographers, enabling them later on to work alone, and where they become teachers at the secondary level to organize excursions for their pupils, the one way of ensuring their interest and showing them what geography really means.

In short, the synthetic nature of geography requires the closest possible relationships between the various forms of teaching, practical work, seminars, and field work. Each form of teaching must be integrated, so that the students may have an overall perspective. Without this no training in geography is adequate. This, for example, explains the complaints of students reading geography at the Sorbonne. They are given highly specialized courses, all of considerable importance, but their juxtaposition does not constitute training as a whole. Lastly, the practical work and the field work are often unrelated to the courses, the field work being too often open-air lectures.

This integration of the various forms of training is essential in geography and must be taken into account if the quality of the studies in the different institutions is to be compared. It is one of the reasons for the difficulties which arise in countries where geography has been divided into physical geography attached to the natural sciences and economic or human geography combined with other disciplines. An organization such as this raises serious problems for the training of the complete geographer. The situation is, unfortunately, similar in countries where the student cannot base his studies on geography and must devote half or even more of his time to other subjects, as in Italy, or even in France before the recent reform.

A slow maturing during studies which are permanently based on geography and a careful co-ordination of the teaching and the syllabus, stressing the relationship between the different aspects of the discipline, are as necessary for the training of geographers as the systematic practice of observations upon documents and in field work. The rôle of the gradations in geography, the sense of discrimination, as much as the exactness of observations, is of the greatest importance in the concepts of teaching, an importance which far exceeds the formal subject-matter of the syllabuses. This fact makes comparisons still more difficult and explains why we have had to broaden our survey. This has also contributed to the difficulty of compiling this report.

(3) REQUIRED STANDARD OF THE TEACHING STAFF

To provide a training of this nature it is essential that institutions of higher education should be provided with adequate staff both in quantity and in quality. If the staff is too small and cannot carry out research work effectively and assduously the best-organized studies cannot produce either good students or graduates. The problem is of major importance, although it is not always given the consideration it deserves. It has two principal aspects:

(*a*) *Organization of the Teaching Staff*

Although geography may occasionally still be lost sight of in the arts faculties, its problems are those of the sciences, the natural and human sciences. The importance of the practical work and the supervised exercises, in the lecture room or in the field, implies a graded organization of the teaching staff, comprising two clearly distinct levels.

(i) Teachers of practical work, assistants, demonstrators, tutorial assistants, etc. (the titles vary greatly from one country to another). In France this type of staff is conveniently designated by the term *Cadre B*, which we shall use in this report, as they group together all those responsible for these duties whatever their exact title may be. The rôle of the *Cadre B* is to administer the students and to teach them the practical aspects of personal work. Its work is as important as that of the professors or lecturers, although not properly recognized in some countries. Its numbers should increase in simple proportion to that of the students. If the number of students in a group is too large, some of them, the shy, the hesitant, the slow in comprehension, those with a poor grounding, lose contact with the teacher and drift towards failure in examinations. Results are affected, and for those repeating the course the problem of the numbers is aggravated. The *Cadre B* staff must have a thorough mastery of the methods of work in order to be able to teach them well and demonstrate their application in a practical manner. This implies that they should be recruited from among those who have proved their worth in the field of research, but who possess nevertheless the faculty of imparting the knowledge and breadth of view required of a good teacher. In some cases, it should be stated, educational training would not be amiss. This does not appear to have been systematically organized in any country. This staff must be involved directly and daily in research, maintain close contact with it, and develop their professional ability. To ensure this assistants should not be involved in too many administrative or material tasks, and even less as a sort of personal assistant to the professor, as is sometimes the tradition. Such duties should be the responsibility of a special staff. The staff of *Cadre B* must participate actively in the research teams in the laboratory, under the direction of the senior staff, but be independent and able to carry out their research on their own initiative. This implies appropriate teaching timetables, not exceeding eight hours per week of directed exercises where there are little corrections of the work to be made (laboratory work, for example), but less where the corrections involved are considerable. The universities must be given the means automatically to increase the *Cadre B* personnel in proportion to the number of students. This price must be paid if higher education is to maintain its standard.

(ii) The staff responsible for university lectures, professors, *Privatdozenten*, lecturers, *Maîtres de Conférences*, etc., which we shall designate collectively as *Cadre A*, a term borrowed from the French administration. The origins of this *Cadre* staff are as old as the universities themselves. The professor is the owner of his Chair, and has long remained the all-powerful head of the department. His prerogatives have been somewhat reduced during the last decades in a general trend towards the democratization of the university, but this has not been uniform in all countries. Where professors refuse to accept criticism and inflict their views on their staff, their attitude is particularly harmful, since it prevents the inflow of new ideas. Assistants are then kept in a position of subservient dependence which inhibits the full development of their intellectual capacities. This situation is due mainly to certain types of individual characteristics, fostered sometimes by the institutions and continuing tradition. The university authorities can do much to alter this by emancipating the younger members of the staff, the *Cadre B*, who are the victims of such situations. The training of the students would benefit accordingly. We know some institutions which have been directed for years by eminent but autocratic masters, but which have had neither prestige nor able students, due to the stifling atmosphere created by a head of department who misused his position. The rôle of the *Cadre A* teachers is threefold: to give lectures, to supervise the teaching teams, and to provide the impetus for, and the supervision of, research. A good lecture should not be planned like a textbook. It should constantly be brought up to date, not repeated year after year. The subject should, therefore, be changed from year to year, but may be taken up again a few years later in a different manner on the basis of the latest publications or change of viewpoint on the part of the professor. Courses reproduced in the same way year after year with the same headings and the same subject-matter are unworthy of higher education. If they are good they should be published as textbooks, and they can then be studied under the direction of assistants. If they are bad . . . lectures must lay stress on methods and fundamental concepts, their value being in direct relation to the professor as a scientist and experienced researcher. They can be given only by a professor who has worked a great deal, travelled widely, observed and compared a great deal. A professor should, therefore, never be asked to give courses on regions which he has not visited. We know some colleagues who refuse emphatically to do so. They are right. They are fully aware of the standard of a lecture. The lecture, based on the personal experience of the professor, should broaden the minds of the students, show them how a problem should be treated, help them to understand its complexity and particular nature. The lecture must be an example of method, and as such can deal with only a small part of the syllabus or some aspects of it. The remainder should be taught by means of courses of a less original nature, entrusted to those beginning their careers, comprising practical and supervised work which will train students to work by themselves. This assumes a joint teaching organization for every branch of geography, involving the professor, assistants, and lecturers. This system has been institutionalized in the Soviet Union in the form of 'Chairs', which are, in fact, teams. Another form of co-ordination, also involving a structured organization, should be established between the staffs of the various branches of geography and between them and the related disciplines.

(*b*) *Teamwork*

To attain the aims which should normally be those of higher education, the teaching staff should set up organized and democratically managed teams; this does not rule out the authority of their head of department, whose work combines the close association of research and teaching. This represents a radical transformation of the traditional structure of the universities which is often, to put it mildly, oligarchic in character. This transformation has been brought about by the pressure of the development of the sciences, which has necessitated more equipment and more staff. It has now spread to geography, though in differing degrees in different countries. In Sweden, for example, the transformation is complete.

The transfer of the individual Chair to the team of teachers and researchers is the great transformation which the contemporary university is undergoing. It alone can meet both the unprecedented increase in the numbers of students and the exponential development in research. Its success depends on certain conditions:

(i) Staff regulations which give pride of place to research, as the staff in higher education must be engaged in research in order to stimulate teaching and give it a genuinely higher standard. This implies a limitation of the teaching timetable to 3–5 hours a week for *Cadre A* personnel and 6–8 hours for *Cadre B*. It also implies flexibility in the timetables, so that research work and the contacts with field work and one's colleagues are not trammelled.

(ii) A graded organization with teams operating on the basis of individual tasks, and not a series of medieval links assuring personal subordination. The personal assistant is a relic of former times which must be done away with quickly. The assistant is a young, active researcher who from the beginning is gradually acquiring mastery of his profession. This means that these duties should be carried out by a staff specially recruited for this purpose.

(iii) To ensure that these teams function properly each member should be in his proper place. It is necessary, therefore, that teachers be assisted by a qualified staff, both in the administration and the laboratory—stenographers, administrative and scientific secretaries, technical auxiliaries. Assistants must not be asked to do this work; otherwise they will be unable to do their work as researchers and teachers. The organization adopted in France in this sphere may be considered satisfactory, with its staff of technical auxiliaries (*aides techniques* and *collaborateurs techniques*). Unfortunately the staff is far too small and should be tripled on an average.

If the university is not to be overwhelmed by the flow of students it must be given the means to pass from the system of the individual Chair to that of the team, as we have explained above. This, however, is not the whole story. The recruitment of staff should not be hampered by inadequate salaries. Too often *Cadre B* staff are underpaid at the outset of their careers, and this calls for a sacrifice on their part. The trend of contemporary civilization, whether one likes it or not, towards a consumer society will make this recruitment increasingly difficult. The considerable effort to provide equipment now being made in many countries may prove to be unavailing, while inadequate salaries lead to the recruitment of mediocre staff. Every industrialist knows that the more highly developed the plant is, the greater the need for higher qualified staff, and hence the need to pay higher salaries.

To avoid the deterioration of higher education following the increase in the numbers of students, it is also necessary to improve its efficiency. If the percentage of students who pass their examinations at the first attempt increases the number of those who repeat the examinations declines, which in turn slows down the growth in numbers. The authorities do not appear to have given this question the attention it merits. I know of no calculation which brings out this factor and shows the cost of failures in examinations, even from the point of view of the profitability of the buildings, equipment, and teaching alone, to say nothing of the social and psychological aspects. An increase in the output of students implies a change in methods. The introduction of teamwork at the teaching level is one such change.

The geography students at the Sorbonne have complained, and rightly, of the harmful effects of the proliferation of the courses, resulting in a fragmentation of the subjects, which prevents an overall view of the discipline and is harmful to their training. This criticism seems to us well founded. It is the consequence of the increase in numbers and the preservation of an individualistic teaching system. The number of Chairs and courses has been increased to meet the increased needs of research and the supervision of those beginning research (in doctorates, etc.). Each professor gives original courses on subjects related to his personal research work, which in itself is good; but where there is no organization in teams there is dispersion and the teaching suffers accordingly.

The efficiency of the teaching would also be improved if general recognition were given to the necessity of teaching methods in higher education. Too often the professor or the assistant totally neglects this aspect. Admission to the university of masses of students raises the problem acutely. Save in exceptional cases, a course is no longer a desultory conversation among five or six people, as was the case at the end of last century. The classes are larger than the classes at the secondary level. Special teaching methods—partly new—need to be devised to meet this situation, which is also new. The problem does not seem to have attracted the attention it deserves. There is, therefore, all the more reason to raise it and to stress the fact that geography, in this area as at the secondary and primary levels, has special problems of its own.

Caught between the massive growth of the student population and the exponential development of research, both the consequences of deep changes in our society, higher education can continue only at the price of a rapid transformation. It can continue to fulfil the tasks which society more and more urgently demands of it only by altering its structure and making it more flexible, by adopting a more efficient organization aimed at increasing its efficiency, by replacing a hierarchy too often medieval in character with coherent inter-related teams based on both research and teaching, and by giving educational problems their rightful place.

Special Problems in the Teaching of Geography at University Level

It was necessary in the first instance to set out the general problems—and they are very serious—which higher education is facing and which are having their repercussions on, among others, our own discipline. They provide the framework wherein our specific problems can be placed. They show that the solution of these problems, important as it may be, is not enough. The part depends on the whole. The characteristics of the teaching of geography at university level in European countries can usefully be compared only if allowance is made for the differences in the manner in which their higher education has carried out the general reform made necessary by the considerable changes in our society.

A rapid and harmonious development of geography is of the greatest usefulness, precisely because of these changes, which imply the mastery of terrestrial space. Now geography, like all disciplines, can only be applied after a certain maturity in methodology has been reached. Otherwise the conclusions reached remain too vague and uncertain to be of practical interest, and appear to correspond to common sense too much to require the services of a specialist. Geography is in the process of acquiring this maturity at the very time when a changing society illustrates the need for a study of the problems which are its object.

This is a special situation which is not peculiar to geography, as the problems differ little from those of sociology and social psychology which have reached a similar point in their development. This situation is, none the less, the key to the specific problems of the teaching of geography at the higher level and urgently calls for a basic training to be given to students.

The requirements of practical worth are even more urgent than the academic routine. A discipline designed only to train secondary-school teachers cannot be dynamic. Tradition continues, as the teachers conveniently preserve the syllabuses and the methods by which they were trained. However, practical work introduces an external factor which, being outside these traditions, breaks the closed circuit. A new situation is created which has its repercussions—more or less delayed—on teaching itself. The development of applied geography, for example, encourages the demonstration in secondary education of regional development, the utilization and conservation of natural resources, the overall view of the physical environment with its combinations of interdependent factors. It is for this reason that the basic training of higher education should normally be the same for future teachers as for future specialists or researchers. The exceptions which exist, and which are due to the necessity to train future specialists, although the organization of the studies is mainly calculated to provide secondary education with teachers of the traditional type, are characteristic of a provisional situation and a period of transition.

The problems in the teaching of geography at the higher level are thus general ones, and there should be no distinction between the training for future teachers and that for future researchers and specialists. It is at the level that follows the studies that the distinction becomes necessary—that is, after the basic training—but this is outside the scope of our report.

These problems stem from the very object of geography itself, which is the "spatial aspect of human activities and their setting". Geography is in consequence above all an observation point, which implies a multitude of contacts with other disciplines, a meeting-place with other more analytical sciences. It comprises also the study of the relationships between social groups and the setting in which their activities occur; hence the relationships between man and the environment. Geography has been primarily concerned with these studies since it has emerged as a form of thought. It encompasses also, by the nature of things, the characteristics of the environment in which human activities occur, this being the particular field of physical geography. Geography is thus at the hinge of the natural sciences and the human sciences. The problem of the interdisciplinary relationships is of prime importance for geography, more than for any other discipline, and the range of disciplines with which it is involved and with which it must collaborate is broader than for any other. This is a vital matter for geography. Its existence depends on it. The very extent of the aspects covered by geography, a synthetic discipline, implies a most extensive and varied training and the acquisition of a real experience beginning at the level of the basic studies. Bringing students into contact with facts raises special problems.

We shall, therefore, examine in turn these two particular aspects of the basic teaching of geography at university level:

Bringing students into contact with facts of considerable variety;
The extent of the relationship between geography and other disciplines.

(1) PARTICULAR PROBLEMS RAISED IN BRINGING STUDENTS INTO CONTACT WITH THE FACTS

The variety of factors comprising the definition of a geographical fact results in geography being a discipline of experience. In the natural sciences ecology is similar; it also has a synthetic point of view, and is so closely related to geography that it could easily be a branch of it, in the guise of biogeography. We have consequently dwelt on the necessity of a slow maturing which will enable young students to assimilate geography.

(*a*) *Organization of the Studies*

More than in other disciplines, a fairly long basic training is absolutely necessary in geography. None of our colleagues thought two years sufficient; the great majority thought four years essential. Some even asked for five years. A geographer cannot be given a training in a shorter period. This can at best arouse curiosity and initiate a training. This unfortunately is the situation which exists in France, where teachers at the secondary level, who are holders of only one *Licence*—they are many, following the massive recruitment of these last years—or of the *Capes* in history, have studied geography full time for only a year, or at best a year and a half. In fact, in more than 80 per cent of the secondary-level classes geography is taught in France by non-geographers or by teachers who have not studied the subject sufficiently to become real geographers. In spite of the fairly important place given to geography in the timetables the results are poor, and it is rare for students with a *Baccalauréat* to have a proper idea of the discipline. Too many of them are discouraged by a teaching that is abstract and mnemonic and which ignores the real problems geography can help to be understood—urbanization, regional development, expansion, etc. *The duration of the basic training is one of the main criteria* to be considered when comparing the standard of training in the various European countries.

Geography is a complex discipline, requiring the harmonization of many and greatly varied facts. As a consequence, if not mastered thoroughly, it deteriorates into a sort of hold-all with encyclopaedic pretensions, as different from the real geography as are radio games for the book-learned, consisting of reciting the tributaries of some distant river or the population of the third largest town in Nepal. To enable students to appreciate this complexity and to acquire the basic concepts indispensable to the assimilation of the methods of the discipline, their attention must be concentrated during the period of slow maturing which we have shown to be necessary. This means that they should have but one area of interest in order to avoid the distraction of their attention. *The basic training of a geographer must of necessity be grounded on geography alone.* This does not exclude—quite the contrary—combining geography with related disciplines; but it does forbid the coupling of another discipline with geography during the period of the basic training on terms of equal or, worse, of greater importance. In this connection the example in France is significant. While the French school of geography is outstanding and considerable efforts are made to provide the teachers with substantial resources, the results are poor. The French graduate in geography does not reach the standard of basic training desired. It is impossible to find him a post as a specialist; whereas in Sweden or in Holland there is no difficulty whatsoever. This is one of the consequences of the compulsory and exclusive coupling of geography with history, which exists only because of its continued convenience for teaching at the secondary level, and goes back to the time of Napoleon I, when a good memory was the only qualification required for the two disciplines. Most geography students are unhappy when they are compelled to study history, as are history students when they have to study geography. The results show the effects. The situation is still worse in Italy or in Greece, where geography is drowned in general degrees, occupying less than a quarter of the whole. The students fall back on the medieval practice of learning by heart.

If it is logical and profitable to couple Latin with French, Italian, or Spanish, and German with English, since this allows valuable comparisons to be made, it is quite harmful to couple geography with another discipline, as the students then lose the ability of acquiring a proper basic training in geography itself. The very nature of geography forbids it. Its development would be restricted, it would be condemned to remain enclosed in archaic conceptions, rendered useless for teaching as for research or practical work. *No equivalence is possible between countries where geography is the subject of a specialized degree, and where it is taught in all its aspects, and those countries* *where it is combined equally with another discipline or drowned in a non-specialized degree.*

The retention of these mixed groups of disciplines is obsolete; it is crippling and unjustifiable. It is a source of difficulty because of the increase in the number of students. It is evident that the less the degrees are specialized the less the courses are varied and the greater is the number of students. In these circumstances, therefore, it is impossible to organize practical work, supervised exercises, outings for field work. If there was a degree in geography, instead of a few courses in geography in a general arts degree, our Italian colleagues would not have to give lectures to an audience of hundreds of students and would be able to put their students in contact with geographical reality. No progress is possible in such conditions as the problems are insoluble.

As to the organization of studies, unless there is a specialized degree in geography which allows a sufficient period of maturing of approximately four years, a satisfactory standard in the basic higher studies in geography, able to meet the manifold demands of modern society, cannot be obtained.

Let us now examine the material conditions necessary to provide an effective basic training.

(*b*) *The Material Conditions of Organization in Teaching*

We shall disregard the general problems which have been previously examined, such as the organization of students and teaching teams, etc. We shall merely deal with the specific requirements of the discipline in order that its teaching may be effective. We shall thus have to distinguish several aspects.

(i) The experience of facts must in the first instance be acquired in the field by direct observation under the guidance of the teaching staff. As we have seen, it is necessary to combine field work in its varied aspects with detailed studies which go to the heart of the subject. The diversity, the riches of the geographical environment, is such that distant travel is essential. It is distressing at a time when all Governments are in agreement on the necessity of substantial aid for development that most school teachers in establishments at the secondary level do not treat these problems, nor have they any concrete views on them. The development of the means of transport makes possible a complete geographical change of scene, and enables a student to undertake a study in a part of the world very different from that in which he has been brought up. At least one distant journey of this kind is absolutely necessary for the basic training of a geographer. In any case, it would appear that about thirty working days in the field each year are a reasonable minimum. This is one way, among others, of having secondary-level teachers capable of employing active methods and enabling their pupils to study concrete facts outside the classroom. The importance given to field work and the manner in which it is organized are essential criteria in the comparative evaluation of training. Obviously, tourist-like excursions without exercises or observations by the students for the purpose of writing papers and holding discussions do not correspond to the teaching requirements of real field work and cannot be taken account of in these comparisons. A close collaboration between all the members of the team responsible for a particular part of the teaching is necessary if it is to bear the fruits one expects of it. Teachers should not relieve themselves of this responsibility by systematically passing it to assistants who are just commencing their career.

(ii) In practical work the direct experience of field work should be supplemented by the study of documents. The whole of the documentation on which geographical research is carried out should be known by students during the period of their basic training. There should be no restrictions. Students should make themselves acquainted with all the usual types of documents, not only topographic, geological, ecological, and biogeographical maps, but also all types of year-books of statistics, economics, demography, climatology, hydrology, and above all aerial photographs. The capital importance of aerial photography has not always been sufficiently understood in the teaching of geography at the higher level. It is not always appreciated that this is a much more important basic document for a geographer than the best-made maps, that it is inferior to the latter only in respect of the geometrical aspect of the relief forms, but, because it is more concrete, it allows the observation of a mass of facts which are not always apparent at ground level or appear there in different form. It seems to us essential to include systematically the utilization of photographs in the basic training of a geographer. The labour market as much as the development of the discipline itself requires it. A growing number of planning, development, long-range forecasting, and public services are using aerial photography and are looking for staff which can interpret it. Who better than the geographer can provide this service?

But the utilization of various documents, especially aerial photographs, requires close and long study by the student. It is in this field that a slow assimilation and acquisition of experience is particularly essential at the level of the basic training. Geographical institutes should, therefore, be equipped with collections of documents comprising varied material and in a sufficient number of copies to allow students to use them for as long as they wish. This automatically requires specialized working-rooms, equipped with drawing tables, stereoscopes, and small calculating machines. We consider that the students should devote 40 per cent of their time to practical work in the classroom. This involves rooms of such dimensions as will accommodate at the same time this percentage of registered students with an average area of five square metres per student, or 125 square metres for a classroom to be used by a group of twenty-five students, which is considered to be the maximum acceptable number.

Personal work of sufficient duration on the widest variety of documents, together with a systematic instruction in the use of aerial photographs, is one of the essential criteria of the quality of the training given and of its adequacy for the requirements of a basic scientific education, as well as for professional openings, including teaching. Such work can be undertaken only to the extent that collections of documents of sufficient variety and quantity are provided and that there are appropriate rooms properly equipped.

(iii) Training in geographical methods involves training in cartography and the practical work of physical geography. The map is the language proper of the geographer. In practice any geographical study should be capable, at least in part, of being translated into maps, or from maps, which follows from the spatial viewpoint included in the definition of the discipline. In human and regional geography almost all analysis is closely linked to cartographic methods. The training of a geographer is thus unthinkable without practical and theoretical instruction in cartography and without important exercises in map-making. In France, where the *Licence* in geography is inadequate, geographers have insisted on this point and require students sitting for the Certificate of Regional Geography to draw a sketch based on documents during the examination. An excellent book has been written for the preparation of this test. It is not for training professional topographers or draughtsmen, but only for persons who can think and express themselves in terms of cartography—that is, to devise maps and have sufficient practice to translate their work cartographically and to abstract the contents of a map. This also requires practice, which can be acquired at the same time as one learns to utilize the documents. Alongside this, in physical geography, the basic training should comprise an initiation into the methods of measurement and analysis which enable the establishment of a whole series of facts. Students must have seen and handled the equipment for climatological and hydrological measurements. They must have some ideas of laboratory methods and their employment even though their systematic utilization requires a more thorough and more specialized study.

For the basic training there should therefore be in each geographical institute a small meteorological station, comprising the most common equipment where the students can become familiar with the methods of observation, and a small geomorphological laboratory where they can be given a brief outline of the techniques used in the study of materials (granulometry, morphoscopy, essential physical properties, etc.).

(iv) Finally, each establishment must, as an absolute necessity, possess a specialized library which will allow teachers to document themselves and students to learn how to do so. This library must not, of course, be limited to works and reviews, but must also comprise atlases, a map library, and a photographic library. The map collection and the aerial and ground photographs, the slides, especially those in colour, should not be limited to the needs of the practical work, but should provide a documentation which can illustrate the courses and be used in the seminars. Generally, it is preferable that this documentation be in the institute itself rather than in a central library, to facilitate the use of the books and documents, particularly during courses, seminars, and practical-work periods. The students should have easy access to this documentation whenever they wish.

Although it is a good thing that atlases, maps of all sorts, and folders containing aerial photographs increase rapidly, they are expensive to buy. It is becoming more and more difficult for institutions to acquire them, a problem which can be resolved only by an increase in their working funds.

Each establishment must possess a specialized library, easily accessible, under the supervision of a specially trained librarian, which is the basis of the documentation, not only in works and reviews but in atlases, maps, aerial and ground photographs, and slides. All this material is as important for the geographer as museum collections are for the archaeologist and the naturalist.

If the training of geographers is to meet the requirements of modern society it requires the material means without which the results can only be bad. Without these means the very ability of the teachers deteriorates rapidly, which explains the reason why foreign teachers working in under-equipped countries hasten to return to better-equipped universities.

These material means are then, to sum up, the following:

Funds for students' systematic field work;

Sufficiently well-stocked and varied documentation for practical work: topographical, geological, and thematic maps, aerial photographs, yearbooks of statistics, economics, demography, climatology, and hydrology;

Sufficiently large rooms for practical work, capable of accommodating at the same time about 40 per cent of the registered students, with five square metres for each place, equipped with drawing tables, small calculating machines, simple drawing material, and stereoscopes;

A small, simple meteorological and hydrometry station;

A small geomorphological laboratory equipped for granulometry, morphoscopy, and elementary chemical determinations;

A specialized library, comprising notably atlases, maps, aerial and ground photographs, slides, easily accessible and with a specially trained staff provided with card-indexes;

Research laboratories enabling professors and assistants to carry out successful research work in their specialized subjects in order to maintain their professional ability and, as a consequence, the quality of their teaching.

These pressing needs call for a special building, or at the very least the exclusive use of the wing of a larger building where all the premises of the geography department are combined and next to one another.

(2) THE PROBLEM OF AN INTERDISCIPLINARY OPENING

The need for bridging with different analytical disciplines, organizing interdisciplinary work, and increasing contacts in order to offset the drawbacks of research which becomes more specialized the further it is pursued, is now generally recognized. It is therefore not surprising that we should stress this point in connection with geography. We should, however, like to bring out one essential fact: the case of our discipline differs from that of the others. For geography an inter-disciplinary opening is not only a useful complement; it is essential. It is not a new requirement arising from a certain stage in scientific development and the increase of closely related specialized research. It represents a continuous and necessary process going back to the beginning of the discipline, in the intelligent curiosity of a Thucydides or a Strabo. This is obvious in the definition. The spatial organization of human activities and their setting, which is the subject of geography, involves a close relationship with all the more analytical disciplines having more restricted objectives with localized applications. How can climates be understood without a knowledge of the physics of the atmosphere, and meteorology, which determine them? How can geomorphology be practised if vegetal cover, climate, and soils are disregarded? How can industrial localities be studied without understanding the economic mechanisms which determine the life of enterprises? How can the districts of a city be defined and their mutual connections analysed without taking into account their social content, or the importance of psychological aspects?

If geography is to be real it must be based on exceptional interdisciplinary relationships.

As is well known, interdisciplinary work is difficult. Mutual goodwill is not sufficient to organize it and make it fruitful. It supposes something quite different; it implies, at the least, a common language. Each must understand the other, not a simple matter with the rapid development of the concepts of every special discipline. To start this dialogue it is necessary to possess a sufficient basic conception of the other partner's speciality to be able to follow his thinking and relate it to one's own. When one wishes to go further it is necessary to be aware of the methods used and the fields in which the research is being directed. Any research can only grasp but one aspect of reality; it can never understand it entirely. An interdisciplinary dialogue is fruitful where it allows the facts to be better understood through the different methods of approach of the two disciplines concerned. For a geographer it is often a case of comparing those of more than two branches of science.

By its very nature the discipline of geography is a meeting-place for the natural and the human sciences. Fortunately, these are sciences with the same statistical problems and probabilities. They are none the less extremely varied.

This creates a special difficulty for the development of geography. Anything which limits its use of a wide range of related subjects impedes its development and limits its expansion.

The problem of the position of geography or, better, of the freedom of its relations with the other disciplines arises at the level of the basic higher studies.

For centuries geography was considered mainly as a guide for a journey, intended to furnish information on countries and peoples in order to understand history. To sing the praises of the great men was the lofty style where literature and history met. The rôle of geography was to provide the décor for the theatre. This attitude continued until modern times. Is the famous picture of Vidal-Lablache's geography of France not the modest introduction to E. Lavisse's *History of France*? It is in fact one of the classics of modern regional geography. There still remain many traces of this attitude in European university organizations. Geography is drowned in the general literary disciplines in Italy, or irrevocably linked to the history of France, without speaking of Greece or Spain. Classical recollections still carry weight, and particularly so in the Mediterranean countries which are the most permeated by them. In those countries they hinder the development of our discipline.

In the Germanic countries, on the contrary, this classical tradition scarcely influences the organization of higher studies. Geography is born of the curiosity of travellers. Men like Humboldt, Richthofen, Passarge, have greatly contributed to its development. They were more interested in nature than in man. Modern German geography sprang mainly under the sponsorship of the natural sciences, from a communion with nature. The contrast with the Mediterranean countries is striking, and it still persists. The result is that geography is associated more with the natural and physical sciences than with the literary disciplines. There is occasionally a fairly marked division between physical and human geography—in Sweden, for example. This is due in part to the situation which arose in the nineteenth century when physical geography took form from the work of the naturalists and German human geography launched into theories more approaching philosophy than anything else. This contrast in the development of our discipline between the Germanic and the Mediterranean Greco-Latin countries is unfortunately reinforced by the general conceptions of the organization of universities. In the Greco-Latin countries, influenced by Roman law, clear-cut positions, explicit and precise legal and administrative systems, and definite classifications are valued. The organization of the university is controlled by the State, without much consultation with those concerned. All universities and all disciplines must be alike. In France, for example, although it is almost impossible for students in the science faculties to change over to the arts faculties and vice versa, studies in the two faculties are expected to proceed on strictly parallel lines. The Latin mind, by virtue of its legalistic formalism, makes for bureaucracy and the rigidity of geometry. It favours strict compartments. All this hampers the development of geography, which calls, on the contrary, for fluidity, the breaking down of compartments, and the cross-roads position from which communication with any point can be made. The Greco-Latin university system knows nothing of alternatives and would have everyone cast in the same mould. Legalism fosters the maintenance of antiquated systems. In France it has required a good general organization of higher studies to allow geography to develop in spite of a very unfavourable administrative system. The latter has, however, repercussions on the training of secondary-school teachers.

In the Germanic countries, on the other hand, a solid tradition of university freedom exists which is to be found in different forms in Great Britain and Germany. State intervention in university life is considerably less than in the Greco-Latin countries. The university, although largely financed by the State, is essentially its own master. It is not dictated to by decisions of the public administration, in other words, of bureaucracy. A reform such as that which was carried out in France in 1965, without heeding the opinions of the faculties, is unthinkable. As a result, there is much more variety in the organization of the studies and also much more flexibility. Students are allowed to exercise some choice. There are optional subjects. One can eat *à la carte* and not be compelled to accept a fixed menu. The barriers between faculties are less pronounced. Students can register for courses in other faculties. They can thus broaden their outlook from various points of view. It is true that in Germany those who choose geography must also select another discipline as a secondary subject. Reciprocally, geography may be the secondary subject for students studying another main subject. The secondary subject may have little relation to the main subject, being placed side by side but unassociated with it; together, however, they provide a harmonious interdisciplinary training. The system is thus not perfect. It is, perhaps, also regrettable that there should be only one secondary subject when arrangements with other disciplines should be broader. Nevertheless the system has contributed to the rise of geography in Germany, in spite of the severe upheavals of the political history of the thirty years which followed the outbreak of the First World War. Inter-faculty arrangements and the freedom of the university facilitate the introduction of initiation courses in related disciplines and enable geography to be the basis of a specialized training.

Today more than ever geography can play its part, either in the training of civics and as a modern humanism in secondary education, or in its growing and varied practical application in the creation of a rational organization of space, only provided the geographer's training allows him access to interdisciplinary work from the outset. This is the very condition necessary for the expansion of geography. It is not the extension of it; it lies at the very heart of the matter. The rigidity of university organization, the barriers between faculties, the authoritarian pairing with disparate disciplines, is detrimental to the training of the geographer. Specialized studies, based on geography, which allow fully for an introduction to various related disciplines, is imperative. It is, furthermore, a solution to the increase in the number of students. The organization of studies, the importance of a training based on geography on the one hand and the interdisciplinary opening on the other, will determine the value of the basic university training for our discipline.

Criteria to be considered in comparing the Effectiveness of Basic Training in Geography

---

(1) ORGANIZATION OF STUDIES

Duration. The duration should be long enough to allow a slow assimilation, generally four, but preferably five, years.

Students. The considerable disparities at the beginning are due to great differences in the relative importance of the teaching of geography at the secondary level (timetables, standard of teaching). This can be offset, though only in part, by studies of long duration.

Position of Geography. A training based on geography, and on geography only, is necessary. General degrees are absolutely inadequate.

Interdisciplinary Opening. It should be as varied as possible, with no barriers between other disciplines and faculties, and considerable flexibility in the choice of optional subjects. A careful co-ordination between the teaching of related disciplines and that of geography is essential; otherwise there will be dispersion of effort without training value.

(2) ORGANIZATION OF TEACHING

The massive increase in the number of students raises a general teaching problem in higher education—that of maintaining the standard of training, a standard which in the growing technology of our society is vital. In our view the solution is to be found in the organization of a teaching given by graded teams of various teachers who, individually, co-ordinate their activities on the basis of joint decisions in order to achieve the objectives defined at periodic working-parties. In the special case of geography, teaching should combine:

(i) Lectures providing clarification on questions raised and examples of methods designed to enlighten and broaden the student's mind.

(ii) Seminars providing reviews of the subject and discussions, which will train the students to work on their own.

(iii) Practical work in class, supervised partly by young teachers engaged in research and covering the whole range of documentation required for research, maps of all types, statistical yearbooks, and aerial photographs. The students should practise map-making and initiate themselves into the work of the geomorphological laboratory and climatological and hydrological observations.

(iv) Personal work in the library, guided by indications and advice designed to supplement the courses and practical work.

(v) Field work designed to provide a concrete view of the problems raised during the courses and practical work, to teach how to make observations and to start research work (investigations, various surveys, etc.).

(3) TEACHING STAFF AND AUXILIARY PERSONNEL

Teaching of a high standard requires the following staff:

(i) Experienced professors and lecturers, who carry out research, keep up to date by travel, contacts, etc., and whose rôle is to supervise teams, both in teaching and research. Their teaching periods should not exceed three to five hours a week, and they should enjoy considerable freedom (*Cadre A*).

(ii) *Chefs de Travaux Pratiques*, assistants, forming *Cadre B*, their duties being to instruct the students in practical work, under the supervision of *Cadre A*. It should be composed of the younger members of the staff actively engaged in research, and partly in teams. They should be granted complete freedom for the completion of their training, and their teaching periods should not exceed six to eight hours weekly.

(iii) Technical assistants and junior staff responsible for the auxiliary tasks of the teaching which should not take up the assistants' time: management and maintenance of the libraries and collections, laboratories, administrative help and assistance in the preparation of the courses (map-drawing and diagrams, photographic work, documentation, etc.). This staff is of the greatest importance for the efficiency of the teaching staff, both with regard to the training of the students and research work.

(4) EQUIPMENT

The teaching can have the desired training value only if it is given in a satisfactory background, providing:

(i) Lecture-rooms equipped for the projection of slides and films, etc., and which also provide for the taking of notes during the projection.
(ii) Rooms for practical work equipped with drawing-tables, stereoscopes, small calculating machines, simple drawing material, providing for five square metres per student and able to take 40 per cent of the total students.
(iii) A specialized library, with books, reviews, map collections of all types, atlases, aerial and ground photographs, slides, and card indexes ensuring a proper documentation for students and teachers.
(iv) A small climatological and hydrological station, and a small geomorphological laboratory which could form part of a research laboratory.
(v) The situation can be considered satisfactory when the criteria described above have been met and the basic training given corresponds fully to the present requirements of the discipline. It will produce geographers who will make satisfactory secondary-school teachers, specialists, and research workers.

Comparative Study

European geography, while often in advance of that of other parts of the world, is still trying to find its way. Because of the weight of tradition and cumbersome administrative structures the concepts accepted in the field of research are far from being taken as the basis for the organization of university studies. Although in Europe teaching and research are closely associated in higher education, teaching, undeniably, lags behind research. This is in the nature of things. It is often easier to find a new concept than to apply it and make it a basis for the organization of teaching and training. But the lag between fundamental concepts resulting from research, which is brilliant in many European countries, and the organization of university training, still often trammelled by outdated traditions, is particularly marked in the case of geography. Our discipline has evolved rapidly in latter years. It is not only a case of revising the classification of basic data which young students must learn, stressing this instead of that, or even of modernizing teaching methods and adapting them to mass instruction. It means, in most cases, entirely re-thinking the organization of teaching and reorganizing it around new concepts. Society, under the pressure of its urgent needs, requires this new geography to arrange space better, to integrate space and its organization in the solution of the social problems facing it, and to harness more rationally resources which are becoming inadequate for an over-expanding world population.

The geographers, often too absorbed by the daily tasks which have increased enormously following the tremendous expansion of higher education in the last ten years, have not yet realized everywhere the gravity and magnitude of the problems they must resolve if they do not wish to see a waning geography replaced by new and spurious disciplines, such as the 'regional science' of the United States. The danger is great; these new arrivals may indeed believe themselves to be newer than they really are. They can indulge in the excesses of youth. They can profit by the support of ambitious publicity-seekers, and thus benefit from a sense of self-satisfaction which a traditional discipline rejects. Finally, not being embodied in the university structure, they are not prisoners of an often burdensome tradition. In a similar vein of thought, did not the University of Sussex, after reviewing the basic problem of the organization of studies, suppress geography and distribute the bits and pieces amongst sections based on other concepts and other disciplines? It seems to us, however, that here was the chance of re-thinking entirely the teaching of geography and promoting a geography which could have filled its proper rôle and, in consequence, made its contribution to fruitful interdisciplinary work. The aversion to an outdated geography has not been overcome. The example calls for reflection, and it allows the danger which threatens our discipline to be measured. We do not draw attention to the fact from any pride of the specialist, but because we are fully aware of what geography, real geography, which comes from key research, can offer the modern world and our society. It would be regrettable if society failed to take advantage of it, particularly as it meets some of its most urgent needs, needs which only the fundamental concepts—we are tempted to say philosophy—worked out by geographers can fully satisfy. Urbanization, regional development, the struggle against underdevelopment, are, in the first instance, problems which require society to dominate space. These are intrinsically geographical problems; to wish to resolve them without the aid of geographers is to lay oneself open to grave errors that can sometimes be irreparable.

Such is the general situation. The diversity of the present situation results from two factors:

(i) Very dissimilar university traditions, ranging from the complete independence of the British universities to the detailed regulations and complete budgetary dependence of the State-administered universities in France, Spain, or Italy. The traditional place of geography is equally varied. In the Latin countries one is still at the stage of Herodotus and Thucydides, geography being only one of the essential ornaments of the clever literary mind. It is learned at home from books. No institutions, still less any laboratories. No practical work, but large numbers of students and ridiculously short timetables. It is a case of merely giving future historians and men of letters a panorama of the world so that they will not think Malaya is in Scandinavia or Sweden in the Antipodes. The geographers have the greatest difficulty in attempting to introduce something else, something which has a little resemblance to the real geography, whether it be in Italy or even in Spain, where, nevertheless, the great efforts made are finally bearing fruit. In the Germanic countries, however, geography springs from the natural sciences to which it is closely linked, as it is to the human sciences. It appeared in the Romantic movement of the communion with Nature. It is more closely integrated with the natural sciences than with the other disciplines, which sometimes creates difficulties in respect of its relations with the human sciences. However, the empiricism of the German mind gives a greater flexibility to university organization than does the rigidity of the Latin mind, while a student can normally choose between a variety of paired subjects, as we have shown above.

(ii) An uneven standard of development. The birth of a modern geography has, in many countries, met with great difficulties. How can university professors having eight to ten, and sometimes even twelve, hours of teaching weekly, as in some universities in French-speaking Switzerland or in Spain, be expected to carry out research? How can geographers who have not even an office to themselves, as in many universities in Italy and Spain, foster the science? How can students who usually never do any practical work, either in the classroom or in the field, initiate themselves into modern geography and become future research workers? Moreover, these students provide the future secondary-education teachers. They train future university students. A vicious circle of mediocrity is thus created. In some countries such as Italy, French-speaking Switzerland, and Greece real geographers cannot be trained in the present system despite the efforts of a few enthusiastic and wholly devoted colleagues. Modern geography is unknown, no-one sees its importance, and requests for teaching reform submitted by those who are aware of the problems meet only with incomprehension and indifference. Geography still remains, too often and too much, under the stifling influence of history, for example in Spain. It is, however, happily true that under a current reform in Madrid and in Barcelona a specialized degree in geography, requiring three years' study, is being introduced. However, in other countries a geography that is integrated in the science faculties has benefited from all the means considered perfectly normal for a scientific discipline: laboratories, grants for field work, numerous assistants, auxiliary technical personnel, collections of maps, libraries, etc. Such is the case in Sweden, in Great Britain, in Norway, in Holland, in certain universities in Germany, in Zürich. . . . If a few of these institutions lack some modern equipment it is because the authorities have not fully realized its importance. France is an intermediary case. The increase in equipment and means has been considerable, although still insufficient. Geography, in accordance with decisions taken in the time of Napoleon, is taught only in the arts faculties, and they have great difficulty in obtaining funds which are generously granted to the science faculties. Nevertheless since 1945 geography has made outstanding strides and now occupies one of the foremost places in the world. However, the organization of studies, confined as they are to a rigid State framework, still lags very much behind. It required the reform of 1966 to free geography from history, and this is still not complete.

After this brief review we can now take up again the main heads of our survey and examine the comparisons made in greater deal with the help of guidelines.

A. ADMISSION OF STUDENTS, PREPARATORY YEAR, STANDARD OF BEGINNERS

The fitness of new students to receive a specialized training in geography is one of the major factors in higher education and dictates, in part, its organization. It is subject to the efficiency and organization of the secondary education which we have not been able to study in detail because of our terms of reference. The policy regarding admission to the university in the various European countries varies greatly. In those countries where admission is open the level of the secondary education is of decisive importance. In those countries where admission is competitive or there is a special entrance examination the less suitable are eliminated and the possible weaknesses of the secondary education affect only the individuals concerned. Finally, in other countries where admission to higher education is open a preparatory period of education has been instituted which ensures the transition between the secondary and the real higher education (the former *Propédeutique* in France and *Candidature* in Belgium). It is these systems which we shall compare here.

The data we possess have been summarized in Table 1 (p. 78), where for reasons of conciseness they appear in tabular form. We shall, therefore, give an overall picture of the situation here so as to throw more light on existing differences.

(1) THE PLACE OF GEOGRAPHY IN SECONDARY EDUCATION

In most countries geography is not considered a principal discipline. It is, therefore, taught by teachers who are responsible for other subjects too. An important differentiation arises at this point. In some countries geography teachers have had a sound university training and are sufficiently specialized to know what modern geography is. This is usually the case in Germany, Britain, Sweden,[1] in some Swiss universities (particularly Zürich), and in Austria, etc. In other countries the geography training given is poor, the student being obliged to devote a large part of his time to other disciplines. This is the case in France, where students taking the former degree in geography studied the discipline full time for only a year, which is not enough, and where geography in most cases is taught by history graduates, whose ability is not up to standard (only one half-year course of geography). In other countries, like Greece and Italy, geography is even entrusted to teachers possessing a degree, but who have never studied the subject. In Spain it is in the hands of teachers with history degrees who are inadequately trained.

Students arriving at the university are thus in some countries quite insufficiently prepared.

The professional standard, and chiefly the scientific standard of secondary-school teachers, is not the only important problem. The syllabuses must also be considered. If the syllabuses are badly devised and leave no freedom in teaching, the students will not receive a sound initiation in the subject, even if the teachers are good. Thus in France the syllabuses for secondary education are encyclopaedic and aim at providing a complete description of the entire world, but are without training value. General geography is sacrificed, and there is no time to introduce the problems of the modern world, such as regional development, urbanization, etc. Despite the relatively high number of hours allotted to geography in the general studies no great purpose is served because of these regrettable encyclopaedic conceptions. In Italy or in Spain geography appears in the syllabus only in certain years, again with the same encyclopaedic approach. In Italy, except in the technical schools, Italy itself is not studied after the primary school. However, in Germany and in some institutions in Great Britain and Ireland the teachers are greatly interested in the study of the environment, which brings the pupils into direct touch with concrete facts and initiates them in observations and surveys. This is valuable in bringing out the bent of the students, while it provides exercises of considerable training value which are a direct preparation for the practical work of modern geography in the universities.

The standard of students who finish their secondary studies is thus very uneven. In some countries they have gone through a long period of a teaching with encyclopaedic pretensions more or less lacking in interest, and even stultifying (in France). In others they have had only fragments of a similar teaching given by teachers without adequate training (in Spain, Italy, Greece, and in certain Swiss cantons). Sometimes they have had no geography teaching at all or only in the elementary classes (as in Iceland, where, however, a reform is taking place). In other countries, however, they have been introduced to the study of the environment and have made direct contact with men and nature (in some English institutions, Germany, some Swiss cantons, Austria, and in Belgium in the first year of classical studies).

---

[1] In Sweden geography has just been eliminated from the syllabus of the last three years of secondary education. It has, however, been replaced by the study of civics (*Samhällslära*).

(2) UNIVERSITY ENTRANCE

The conditions of university entrance are as uneven as the conditions of initiation into geography in secondary education. Unfortunately, it is only rarely that the conditions governing entrance to universities correct the shortcomings of secondary education. If we allow both for the administrative and financial requirements the following different cases are to be observed:

(*a*) *Countries which have a Limited Number of Entrance Places*

In some countries the increase in the number of university students has been less marked in the last years for financial reasons; the studies are very costly. This is the case in Great Britain and in many Swiss universities. In Great Britain scholarship grants are necessary for most of the students coming from the middle classes or of modest circumstances. In Sweden and in Norway loans are available (but they involve an undertaking in the future) or scholarship grants. These countries are perhaps less affected by the increase in numbers of students and the transition to uncontrolled mass higher education. In other countries entrance to the university is limited by administrative requirements. Students holding secondary-education diplomas are not automatically admitted to the university and must pass a further examination, which is more or less competitive. It is designed to equate the number of students to the number of places available and to safeguard the quality and efficiency of the teaching by avoiding congestion. This is the case in Great Britain, where the restrictions are very rigid, and where the admission of students depends on the number of places available. Occasionally a student may be admitted if, after guidance, he alters his original plans and reads another discipline where there are vacant places, but the aptitude of students is given careful consideration. Geography students are accepted on the basis of the initial training received during their secondary education. On the other hand, in Spain the entrance examination to the university does not include geography. There is thus no selection of candidates who intend to study our discipline, which is all the more regrettable as the geography taught in secondary education is very inadequate. We note also the case of Belgium, where various diplomas are accepted if deemed of equal value, but only for the *Candidature*, which is mainly a preparatory education. These diplomas must now, however, be supplemented by a special examination proving a candidate's aptitude for higher studies.

(*b*) *Countries where Entry to the University is Open, without Preparatory Studies*

In a whole group of countries entry to the university is open and the acceptance of students is based on diplomas, etc. Usually the diploma obtained at the end of secondary studies is required. But sometimes the system is more liberal and young students who have had another training are admitted. Thus in Italy pupils of the normal schools must pass an examination in which there is no geography, and likewise in Switzerland, where many universities are very liberal, or in Ireland, where future geographers take geography as an optional subject. In these countries, where selection is not related to income or other factors, the student population is increasing very rapidly (Germany, Belgium, France, Italy, and Austria). Serious problems arise in the adjustment to mass higher education. They are further aggravated where the initiation in geography at the secondary level is inadequate as in Italy.

(*c*) *Countries which have Organized Preparatory Teaching*

The increase in numbers and the lowering of the standard of new students has led certain countries to organize preparatory education to ensure the transition between secondary education and the university. Sometimes, as in Spain, those studies, which are pursued outside the university, are a preparation for entrance to the university. Elsewhere they are followed in the university itself and are less specialized than the later studies. This is the case of the Belgian *Candidature* which comprises a whole group of subjects in which geography holds a minor position. The choice of those subjects does not always meet the needs of the future geographer. This was also the case with the former *Propédeutique* in France. A student who did not choose geography as optional subject in the *Propédeutique* could thereafter very easily register to study for the *Licence* in geography. There was no administrative regulation to prevent him!

This administrative solution thus presents serious disadvantages. It is for this reason that it was abandoned in France. It is still continued in Belgium only where the pupil is involved in semi-encyclopaedic studies, delaying the beginning of specialized studies based on the discipline without giving him a fundamental knowledge of all the related disciplines which he will need (for example, modern languages, sociology, demography, pedology, ethnography).

The preparatory-year system is not necessary in those countries where the organization of the studies comprises gradual specialization, with the addition of secondary subjects to the principal subject during the commencement of university studies, as in Germany, Sweden, Norway, Austria, and in certain Swiss universities, or as in Great Britain (optional subjects) and in Ireland. The variety of conditions governing admission to the university is thus added to the considerable differences which exist in the study of geography at the secondary level. On the one hand, there are those countries where the traditional methods of higher education have continued, with a considerable staff and a rather limited number of students (Great Britain, Sweden, Norway), and on the other those countries where higher education must be completely altered in order to become a mass education (notably Germany, Italy, France, and Austria).

B. ORGANIZATION OF BASIC HIGHER STUDIES

It will be recalled that we have defined basic higher studies as being studies which provide a training theoretically adequate to provide, after some additional teaching instruction, future secondary- or intermediate-education teachers and candidates for preliminary training for fundamental or applied specialized research. We underline the word theoretically as the very organization of studies results, in the case of some countries unfortunately, in the basic studies being inadequate for the training of qualified geographers. With this reservation there appears, however, a common characteristic: the duration of the basic higher studies is about the same in the different countries. This period varies from three to four years, and exceptionally five years (Spain). In Norway the basic higher education is that which leads to the diploma of *Candidatus Magisteri*, and not that leading to the diplomas of *Candidatus Philologiae* or *Candidatus Realium*, which are the equivalents of the *Diplom* in Germany, Austria, or German Switzerland. The most frequent period (see Table 2, p. 81) is four years. In Iceland and in Sweden the period of three years corresponds to general studies normally pursued with a greater degree of specialization. The periods which we have indicated are the theoretical periods—that is, those of a candidate who passes his examinations at the first attempt. In actual fact the real periods are often longer. But here differences arise between one country and another. The periods are practically always exceeded in Germany, in Austria, in France under the old system, in Iceland, in Sweden, and in Turkey. In Turkey the extension is largely due to the frequently poor standard of the secondary studies, which stems from the shortcomings of the primary education.

For the others the differences are wide (see Tables 2, p. 81 and 3, p. 84). It is difficult to group them, as the system is never the same in two different countries. Nevertheless, though it may be arbitrary on our part, we shall try to sift out several families characterized by certain features or common trends.

(1) COUNTRIES WHERE NO SPECIALIZED TRAINING IN GEOGRAPHY EXISTS

In a whole group of Mediterranean countries geography is drowned, as it were, in a series of other disciplines. The former French system had something of this character, although less marked. In these countries the time given to geography is quite insufficient to provide an acceptable training. The most extreme case is that of Greece, where geography as a whole is not taught anywhere, even as a secondary subject. In Italy geography is submerged by the other disciplines, which lead to university degrees that are not specialized enough, being too general in nature, and which can be obtained not only in the arts faculties but also in the faculties of education, economics, science, and even political science. That geography should be a secondary discipline in the economics or political-science faculties is perfectly normal, since it adds to the general culture of the students of these faculties. However, the place accorded to it is no greater in the faculties of letters or sciences, where the real university geography could be taught and where proper geographers should be trained. Furthermore, geography studies are limited to a few hours a week, about 10 per cent of the total, during a whole year or even two years at the beginning of the degree studies. Although the students, in the fourth year, can prepare a dissertation in geography to obtain their degree, this provision has little importance. They are simply not trained to do this and are quite incapable of undertaking personal research, even of an elementary kind. This is the reason why the standard of research is so low. The teachers cannot initiate the students into this field because of the defective organization of the studies. The dissertations for the degree are limited to compilations without importance, and never bear on the subject of physical geography, the approach to which is apparently less easy. The same problem still obtains in most Spanish universities, the only difference being that the students do not disperse their efforts between a variety of subjects, but devote themselves mainly to history, except in the few universities where specialization in geography has been instituted. This situation is akin to that which existed in France before 1943. The results were very different from those in Italy today. In French-speaking Switzerland the University of Freiburg presents a similar case, the students collecting unrelated certificates for their degrees, one of these certificates alone being for geography (a semester).

In Spain and in Italy a number of colleagues try to react against this disastrous situation, but come up against the rigid and lethargic structures. Geography being in a backward state, no-one is aware of the importance it represents, more particularly for those countries which are in the process of a complete transformation and must adapt their power of production. The same problem is to be found in Greece. Its resolution will probably require an appeal for co-operation at

European level in order to demonstrate by practical achievements what modern geography is, and to help our colleagues to prepare a programme of reform. In Rome and Padua efforts have already been made in this direction. In Spain geographers are actuated by a vigorous movement towards reform and have succeeded in obtaining specialization in geography alongside that in history, but have encountered numerous obstacles. It is as yet confined to few universities, but this progress promises well. The creation of at least one Chair in geography per university was decided in 1967.

(2) COUNTRIES WHERE GEOGRAPHY IS PLACED SIDE BY SIDE WITH OTHER DISCIPLINES

In another group of countries, essentially Germanic, the student is compelled to divide his time between different disciplines, one of which has to be his main subject. We shall term this a semi-specialized training. This system fosters the recruitment of teachers of general subjects for secondary education. It does not respond to the requirements of a real basic university training. Indeed, the disciplines studied do not necessarily have any logical relationship to one another. Their grouping is mainly for career reasons. It is easier for a graduate to find a position in a secondary school where a knowledge of a wide variety of subjects can be conveniently utilized. Thus in Germany, for example, the Ministers of Education in the *Länder* warmly recommend the combination of geography with music or physical education. It is certainly preferable that a teacher of geography should be able to take exercise, but such a training is ridiculous and, naturally, severely criticized by our German colleagues.

The same defect is also encountered where geography is studied side by side with disciplines apparently more closely associated with it, such as history, geology, chemistry, botany, physics, or even economics and sociology. In fact, when a student has to study these disciplines without their being integrated in a geography training he is studying them as subjects in their own right, and not in respect of their relationship to geography. He must try to discover these relationships himself, and this is generally beyond his powers. Do the physicists themselves not teach the mathematics which they require, and yet their own discipline is fairly close to the latter? Instead of creating a fruitful relationship between several disciplines, the students disperse their efforts in studying unrelated and separate disciplines which are merely placed side by side. Nothing is done to facilitate the synthetic approach which is the justification of modern geography. On the contrary, it is made more difficult as the student has less time to absorb geography.

The problem is difficult to resolve, since the creation of the necessary relationship between two disciplines requires a higher intelligence coupled with a special aptitude for synthesis and understanding of the disciplines involved. The compartments created by the administration do not facilitate either the training or the advancement of this type of mind.

Since the problem is not resolved, the student, under such a system, is permanently torn between the claims of competing disciplines. Often the particular qualities required by different disciplines are quite opposed. Apart from their convenience to the headmasters of secondary schools, what have music, sport, and geography in common? A good chemist is not necessarily able to grasp the subtle relationships of cause and effect which exist in the regional systems. It is only rarely that a mathematician has an aptitude for making geographical observations. The intellectual ability needed to succeed in history was the same as that required in geography at a time when the study of these two subjects depended on memory alone.

This juxtaposition is, therefore, inadequate and reflects mainly the antagonism between the facile solutions favoured by the secondary education and the requirements of a good basic university training. Students are compelled to follow this system in order to ensure their future financially. But it is meaningless. The time which the student should devote to acquiring a coherent training in the discipline he has chosen is reduced without any corresponding advantage. The result is to be seen in the considerable proportion of failures in important examinations. In all the countries where this system is followed the actual length of the studies appreciably exceeds the official period. This is notably the case in Germany, in France under the old system (an exclusive and obligatory combination with history, giving the latter a leading position), and in Sweden, etc. The claims of different disciplines, requiring different aptitudes, are consequently in competition, while the increased risk of failures helps to create a state of mental insecurity in students, raises serious problems, and is injurious to the pursuit of satisfactory and effective studies. These drawbacks are, however, less acute when, as in Sweden, the different and unrelated subjects are studied successively and not simultaneously. The student can concentrate his efforts on one of the subjects and avoid being caught between conflicting claims.

This system is in force in Germany, in the universities in German-speaking Switzerland, in Sweden, in Norway, in Iceland, and in Ireland with slight differences in detail. In Austria the situation is still less acute.

(3) COUNTRIES WITH GRADUAL SPECIALIZATION

In some countries geography is studied concurrently with other disciplines that are not integrated in the training in geography, but their teaching is limited to the first years of university education. During the subsequent period geography becomes increasingly important and may even be the only discipline studied.

Belgium is a good example of this system. During the two years of the *Candidature* the study of geography is very limited and forms a minor part of a large range of other subjects taught. Then for two more years, during the actual degree studies, geography is practically the only subject taught, with the preparatory work for a dissertation. This system, however, applies to only a small number of students at degree level. Serious problems would certainly arise if mass education were involved. It appears that the number of students who choose geography is small because of the limited place of geography in the *Candidature*. In sum, geography is suitable only for an élite.

The French system has certain analogies with the Belgian, although the study of geography in the first two years is quite considerable. It is, however, compulsorily combined with a certain amount of history. In actual fact, it lies between the Belgian system of gradual specialization, history being subsequently discarded, and the German system of mixed subjects studied concurrently, as the relationship between geography and history is fairly loose. In preparation for the master's degree the last two years are devoted to a more advanced study of geography, by means of specialized certificates in the various branches of the subject, with or without the preparation of a dissertation similar to that in the Belgian degree. It is also possible to combine one or two certificates in economics, sociology, or the natural sciences with the specialized certificates in geography, according to whether the students are specializing in either human or physical geography.

The system in Ireland is similar, as the two secondary subjects required of the candidate (system or parallel studies) are taught only in the first and second years. One of these subjects is retained in the third year, but geography alone is studied in the fourth and final year.

(4) COUNTRIES WITH A FLEXIBLE SYSTEM

Two countries, Great Britain and Turkey, have a very flexible system. In Great Britain the universities enjoy complete autonomy, with the result that variety is large. In Turkey, despite a comparable degree of autonomy, the universities have adopted common principles in their organization.

The Turkish system is particularly ingenious and pays close attention to the requirements of a modern training. The system of certificates, for which the studies can be staggered over variable periods and which must be taken, in practice, in a fixed order, reconciles the advantages of studies requiring either a certain number of years' work or certificates while eliminating the disadvantages of both methods. The system is very flexible, and a student may specialize in a single discipline or combine studies in different disciplines, there being no limitation to the combination of any of the disciplines taught in the university. Further, as the approval of the professors concerned is required for a combination of subjects, the disadvantages of studying unrelated subjects concurrently is avoided. This system should be taken into consideration in those countries wishing to improve the study of geography.

The system in Great Britain differs from one university to another, but is fairly flexible everywhere. The studies are based on geography, but always combine the discipline with other specialized subjects, studied for more or less long periods of time depending on the university. Students have a choice between various related subjects taught in the different faculties. Geography students may belong either to the arts faculty or to the science faculties, depending upon the choice of the related optional subjects. Most often, gradual specialization is organized in a system of studies based on a number of years. Despite the flexibility of the British system, there are fairly serious disadvantages in some universities. The organization of 'schools' (such as in the University of Sussex) may lead to the breaking up of the disciplines. None the less there are many useful elements in the system, which could be used profitably elsewhere. An experiment such as that carried out in the University of Sussex, and sometimes criticized, would not be possible in many countries.

Conclusion. Despite the effort, somewhat artificial, which we have made to systematize and compare the types of organization existing in European countries, the differences appear great, too great to be reduced. It is impossible to establish real equivalences between the different systems of training at the European level. Equivalences are possible only between limited groups of countries, and even then they would be arbitrary. A Spanish and Italian graduate have nearly the same training, provided they have chosen geography as the subject of their dissertation. But this training is in no way equivalent to that of a Belgian graduate or that required for a master's degree in France. The theoretical duration of the studies in geography equated to periods of full-time teaching, as shown in Table 3 (p. 84), illustrates these differences clearly. How can an Italian who has studied geography for less than a semester have a training equivalent to that of an Austrian who has studied it for five semesters, or a Briton for four to six semesters, or an Irishman (six semesters), or a German (a minimum of four, and often in fact six semesters)?

Even so, in the evaluation of these periods, we were unable to take into consideration a certain number of important facts which would have increased the disparities in many cases. This is the case in the actual duration of the semesters of study. In Italy the number of public holidays and the extension of the vacations reduce the annual weekly teaching hours to an average of 20 or 21 lectures as against 26 to 28 in certain Swiss or German universities, or 24 to 25 in France. The duration of the teaching periods also varies. In some countries it is reduced to 45 minutes; in others it is one and a half hours. What is serious is that these disparities generally accumulate instead of neutralizing one another.

But the statutory organization of studies which we have analysed is only one aspect of the question. It is certainly important, as bad organization makes the efforts of the teachers unproductive and hinders the completion of a proper training, as was the case in France before the recent reform. But a good organization, if necessary, is not enough. There must still be adequate means and resources, in teaching and auxiliary personnel, in premises, in equipment, and in funds, which will enable a training at a high level to be given. Our Turkish colleagues know something of this matter. They have the benefit of organization, but their efforts are largely frustrated by insufficient means and resources. At this level the disparities are further pronounced.

The organization of the teaching and the nature of the examinations are an essential aspect of the problem which we were asked to study. We shall now examine it.

C. ORGANIZATION OF THE TEACHING AND THE EXAMINATIONS

The diversity of the organization of the examinations corresponds to that which we have noted in the case of the studies. In addition, there are very considerable differences in the standard of the tests. We shall begin with an analysis of the organization of the examinations before comparing the various forms of organization of the teaching.

(1) ORGANIZATION AND STANDARD OF THE EXAMINATIONS

We have endeavoured to go beyond the legal stipulations and formal aspects of the problem. Thanks to discussions with our colleagues, we have attempted to set out their attitude as examiners and to specify the criteria which govern their decisions in the correction of the written tests and in oral examinations. It is only in this way that an attempt to compare the values of the examinations and establish equivalences can be made. It is a delicate task, and we are fully conscious of the criticisms it will arouse.

As Table 4 (p. 88) shows, the freedom given to universities and to teachers in respect of examinations varies considerably from one country to another, and differs considerably from that which was observed with regard to the organization of the studies. In some countries where the Ministry intervenes even in questions of detail regarding the studies, complete freedom is given to the teachers in conducting examinations. The number and nature of the examinations is entirely left to their discretion. This is particularly the case in Italy and Spain. As opposed to this, in Germany, the *Länder* assert their authority in the organization of the *Staatsexamen*. In France the duration and marking of the examinations are laid down statutorily, after consultation with representative bodies who sometimes take account of the views of the university authorities, which are not necessarily decisive. The freedom of the teachers, under the control of the dean of the faculty, is limited to the subject of the tests and the method of marking the candidates. The French system is thus most uniform. Only the method of assessment varies from one university to another, depending on the teachers taking part in the examination and the subjects which they choose. The new system, however, introduces some flexibility, allowing as it does the organization of partial examinations during the year to replace the corresponding tests in the final examination. This measure is particularly necessary as the certificates for the master's degree in the arts faculties, to which geography is attached, comprise only an oral examination. The application to our discipline of a general unadapted system results in the paradox that the examinations designed to select candidates for introduction to research do not provide for practical work!

In most countries, however, examinations vary considerably from one university to another, even in countries where they are regulated by Ministries, as in Norway or in Sweden. The university authorities may, in fact, put forward their suggestions; proposals, once they are accepted, or even modified in the course of negotiations, are enforced. Thus at Lund students sit for an oral examination, lasting one to three hours, only in special circumstances, whereas at Uppsala, in physical geography, good candidates may be exempted from such an examination, which only lasts one hour at the most. In Norway, at Bergen, the system of examinations is different from that of Oslo. Naturally, these differences increase in the countries where the universities are autonomous, as in Switzerland or in Great Britain, and are not subject to State control.

However, the views of the examiners also vary greatly. Let us take some examples:

(*a*) Countries where the examination is considered a formality. In some countries it is rare for a student to be eliminated in an examination, and it is considered that all students should normally pass. All that is required of the student is that he should follow the courses and not appear too uninterested in them. The examinations are not difficult, and failures are rare. The actual period of studies coincides with the theoretical period. Spain and Italy are quite representative of this conception, and also Greece (Athens) in so far as geography is taught there. Several examination sessions are held, so that students who may have had difficulty in passing one of them should be kept back as little as possible, even though they may not have had the time necessary to make good their lack of knowledge. There are generally three examination sessions a year, in June, October, and January or February. Many teachers defend this system, holding that the students are forced by those examinations to remember what they have learned. This reflects a certain psychology, scarcely propitious for the acquisition of a serious basic training.

Unhappily, these countries are those where the organization of studies is the most deficient in respect of geography.

(*b*) Countries where the examination is considered a strict control. This is more or less the case in the majority of the other countries. In Turkey, for example, the examinations have been organized on a very strict basis in order to combat the traditional carelessness. A student who has failed in an examination must repeat the whole year, even in the other disciplines. He cannot fail in his examinations indefinitely, and may not take the examinations again unless the teachers concur, allowance being made for his work during the year. In Great Britain a candidate takes a written and oral examination in each of the subjects he has chosen, often accompanied by a practical test. This examination takes place after the study of each discipline has been completed. In order to avoid failures, the teachers organize preliminary examinations for those subjects which are taught over a period of several years. In Belgium a mark of six out of ten is legally required to ensure that a student will not offset his weakness in one subject by his strength in another. In France (old system) and in Sweden, where the importance of geography is insufficient to train good geographers, the examinations are usually fairly difficult in order to obtain a real selection. It is the same in Germany, especially for the secondary subjects. With regard to the main subject, the teachers often require the student to prove that his standard is high enough to pass from an elementary to a higher seminar. These unofficial end-of-year examinations are based on the average marks in the tests or in consideration of the marks obtained during the course of the year. In Norway there are two examinations a year, except for the presentation of dissertations, which means that the student must make a considerable effort before sitting the examination again.

There are thus two different attitudes. It is striking to observe that it is only in those countries which have adopted the second that geography is in full development at the research level. The second attitude would appear to be essential if students are to acquire a proper basic training.

Some very marked differences are again found in respect of the duration, the number, and the standard of the examinations.

Some systems are completely ineffectual. This is the case in Belgium at the level of the *Candidature* in universities with a large student population. The examinations are oral only, which puts an intolerable burden on the teaching staff, particularly as the numbers in the first year are very large, no elimination having as yet taken place. The advantages of the oral examination, which allows a personal contact, are completely illusory when the examination lasts only five minutes and about a hundred candidates file past in a day. Further, it is essential that a candidate should know how to write, and this cannot be ascertained except by a composition. Similarly, the American habit, which is growing in some countries because of the pressure of numbers, of setting a list of questions is not very felicitous. Such examinations merely show whether the student possesses an elementary knowledge, and notably a proper vocabulary. In that case tests must be held in the course of the year or, at worst, at the end of the preparatory year.

To assess whether a student has genuinely acquired the intellectual freedom which should be the feature of a European higher education, there should be a choice of varied and complex tests of sufficient duration. We consider, like the vast majority of our colleagues, that an examination is not a proper guarantee of the standard of training unless it includes:

(*a*) Practical examinations, commentaries on maps (with the utilization of the geological map for geomorphology), map-statistics illustrated by graphs, aerial photographs, map-making and synthetic diagrams, etc., carried out in a limited but sufficient time. The dissertation may be either written or oral; it does not matter. The oral has the advantage of allowing a discussion, but requires more time to be effective. These examinations should enable the candidate to show that he can work by himself. It is for this reason that he should prepare for such tests himself, and not, for example, work on a map provided in advance, as is sometimes the case in Italy. In the latter case he need merely be the spokesman of those who have done his work. It is, indeed, excellent that these practical examinations should help to eliminate some students. They should normally be preliminaries to all the other examinations, and it should not be possible to compensate for defects in this field by written papers or clever theoretical verbal replies.

(*b*) A written composition, of adequate duration (three or four hours), on a single subject sufficiently wide in scope. The candidate should have the opportunity of supplementing his answers from memory on certain points by the use of statistics, maps, atlases, etc. Such an examination is a proof of the student's ability to assimilate, write, and make a synthesis. These are the qualifications required of a geographer and, indeed, of anyone with a higher education.

(*c*) Personal work, undertaken during an appropriate period, at least six months, under the supervision of a teacher and presented in the form of a dissertation which is the subject of subsequent discussion. A hash-up is to be ruled out. The student should thus give proof of his aptitude for making observations, for applying the methods of research and the mental discipline he has acquired at the university, for being able to set forth clearly and concisely data and ideas. For geographers it is evident that such work must comprise field observations, utilization of data, and map-drawing to the greatest extent possible.

Such a series of examinations is required of candidates in all the European countries where geography is highly developed and is the subject of proper research. It necessarily implies a fairly long methodological training, which can be acquired in the course of sufficiently specialized studies based on geography. In Italy, in Spain, in Greece, in certain Swiss universities, such a training does not generally exist, as a result of a defective organization of the studies. In France, under the former system, only a small proportion of students acquired this training because too much of their time was taken up by history. It will, however, be acquired in the future at the level of the master's degree, but not at that of the *Licence*. The latter must not, therefore, be taken into consideration in establishing the equivalences between European countries for the basic university studies. This is also the case of the *Candidature* in Belgium and the

Ordinary degree of the British universities. In some countries, like Germany, the students are involved in several subjects which have no bearing on one another and which are reflected in a longer period of studies. However, at the level of the *Staatsexamen*, and at that of the doctorate in particular, a satisfactory training is acquired.

In the light of these criteria the following list of theoretical approximate equivalences can, therefore, be put forward:

AUSTRIA: *Lehramtsprüfung* if necessary; *Diplom* preferred.
BELGIUM: *Licence.*
DENMARK: *Candidatus Scientiarum.*
FEDERAL REPUBLIC OF GERMANY: *Staatsexamen* with dissertation, or, better, *Diplom.*
FRANCE: Former system; *Diplôme d'Etudes Supérieures* if need be. New system; *Maîtrise* with a dissertation covering a period of one year or four certificates.
ICELAND: Specialized diploma received in another European country.
IRELAND: Honours degree with a dissertation.
NETHERLANDS: *Doctorandus.*
NORWAY: *Candidatus Realium,* or *Candidatus Filologi.*
SWEDEN: *Filosofi Licensiat.*
SWITZERLAND: *Diplom* from Basle, Zürich; *Licence* of the University of Lausanne if need be.
TURKEY: Degree with four certificates, with a dissertation.
UNITED KINGDOM: Honours degree with a dissertation.

In Italy and in Spain an equivalent training exists only exceptionally in those universities which have instituted a specialized degree, requiring the preparation of a dissertation in geography of a good standard. Unfortunately this kind of training cannot be acquired under the general system. In Sweden the diploma of *Filosofi Magister* is below the standard we have set, in that it is insufficiently specialized, with a maximum period of studies of three semesters. It can be considered only as the equivalent of the new French *Licence* or the Ordinary degree of the British universities.

However, the foregoing equivalences are only theoretical. The degrees conferred by the universities simply mean that the student has satisfied certain standards set by the examiners, but which are a function to the teaching of these same examiners. The standard of teaching is, consequently, of prime importance if the training obtained by the young graduates is to be appropriately compared.

(2) ORGANIZATION AND STANDARD OF TEACHING

The organization of the teaching must be such as to enable the student to attain intellectual independence—that is, to develop his critical faculty, find his own information and documentation, and be capable of undertaking personal work on elementary research. Such a training then allows the student to acquire a mastery of the techniques of education which make a good teacher at the intermediate level, or the techniques required for research work. This assumes a harmonious mixture of basic courses which furnish examples and induce reflection, a methodological training which provides a particular mode of thought and approach to problems, a practical training involving personal work (observation, documentation, and handling of data), and the means of expression, which, for the geographer, are not only oral and written, but also graphical.

If the teaching is to be completely sound and effective it must be given by a staff experienced in carrying out research daily and under adequate material conditions (field work, libraries, work-rooms, collections of maps, aerial photographs, various statistical data, etc.). Again, the students must be properly supervised to facilitate communication between them and the lecturers who are training them.

An appropriate constitutional structure is, in consequence, a prerequisite. But it is not sufficient. There must be a highly competent staff in reasonable proportion to the student population. There must further be accommodation, a technical staff, and sufficient equipment. In these matters unfortunately conditions are far from always being satisfactory, leading too often to a deplorable wastage of intellect, which plays a dramatic rôle in limiting efficiency and lowers the actual standard of the basic studies.

A summary of the main data collected is given in Table 5 (p. 94). Let us explain some of the methods used in drawing up this table.

For the timetables we have given the average real weekly timetables, making allowance for the difference in the duration of the teaching periods in the various countries. Twenty-five weeks per year have been taken as the period of reference. In countries such as France and Italy the hours of duty are laid down by regulations (three hours per week). Frequently the shortage of staff involves more teaching hours, particularly in France. In the case of assistants, instructors, secretaries, etc., allocated to the practical work, teaching is only a small part of their duties. They have to help with the management of the institution, the running of the library, and even the professor in his personal work, as in Germany. These duties are often heavy, and this is reflected in the very small number of teaching hours.

In respect of the staff, we have calculated the teacher-student ratio. We have added together the various categories of professors, lecturers, and assistants, whatever their duties, but in doing so we have considered only the assistants who, in actual fact, teach regularly. It seemed to us that this method was justified by the fact that despite their different duties, all the teaching staff share the administration of the students.

As to the field work, we have taken account only of the excursions organized and supervised by the teaching staff and devoted solely to scientific geographical observations. Excursions of a touristic nature and periods spent by students in the field have been disregarded. They are important for studies requiring a dissertation based on personal observations, but it is quite impossible to take them into account.

In the practical work in class we have taken into consideration all the exercises supervised by the teachers, where the students learn to use geographical methods in groups. This, of course, includes exercises using topographical, geological, and other maps, aerial photographs, statistical documents (economic, demographic, climatological, hydrological, etc.), and the small discussion groups similar to English or Swedish tutorials, as well as the papers which students should read before the other students and which are then discussed and rectified. This corresponds exactly to the work done in the German seminars, to the practical work and supervised work in France, etc. Their part in the studies has been evaluated by comparison with the professional lectures, by calculating the percentage of the total timetable of the courses which these exercises represent.

This table brings out a certain number of points. One of the most significant data is the *teacher-student ratio*.

This is one of the crucial problems of higher education. As the aim of the universities is to enable a large part of the future intellectual élite to think independently, it is essential that a sufficiently close personal contact is established between teachers and students. It is equally essential that teaching should be as constructive as possible, so that the student can rise to the level of the master. Clearly, the latter objective cannot be attained at the level of the basic studies, but these should enable the students capable of doing so to be known and selected and help them to take the first steps, which are the most difficult.

Two major problems arise: that of the availability of professors and that of the staff responsible for the administration of the students. They have become more and more acute with the quantitative transformation in the university, and with the coming of mass higher education, which has broken the traditional ties formerly existing between the master and his disciples, such as can still partly be found in the organization of the English colleges.

In order that a teacher in higher education may fulfil his task, he must carry out research. It is by devoting a large part of his time to learning that he can succeed in teaching. The close combination of research and teaching is the characteristic of higher education. But it raises problems which become more and more difficult to resolve with the immense progress in research on the one hand and the staggering increase in the student population on the other. For us the solution can be found only in teamwork, associating both the teachers of various grades and the researchers working with them, and the students. Such a solution would partly be a return to the most ancient traditions of the university. But the position is often far from this.

The lowering of the standards of university education which can be observed at the present time in many European countries is due in the first instance to two series of difficulties of a material nature:

(*a*) The over-exertion of teachers, their number not having increased in proportion to that of the students, the increase in administrative tasks, and the progress of research. University teachers are one of the few professional categories whose leisure time is declining and practically disappearing, although their profession requires considerable intellectual freedom and makes this leisure a necessity, not only as men, like others, but for their work. Except in those countries where barriers strictly limit admission to the university, as in Great Britain, the problem is acute, as there has been too great a delay in the recruitment of teachers, or it is limited by financial considerations. The professor is caught between too many obligations, from teaching and research to chasing after funds, to be able to do justice to any of them. He has no time to direct his department. Too often these general difficulties are increased by the lack of material means and technical staff.

(*b*) A shortage of teaching staff as a result of the disparity in the teacher-student ratio. It is only in Great Britain and in Sweden that this major difficulty has been avoided. In Sweden there is automatically one demonstrator for every fifteen students. In Great Britain the tutorial system is an institution of the highest value. Unfortunately it is threatened by the massive increase in students which is taking place despite the *numerus clausus*. However, even in the universities where the teaching staff is just adequate in quantity, the results are poor, even bad. This is the cause of the complaints, for example, of the students in Paris. According to them, the teachers have no working relations with one another, each delivering lectures on his pet subjects, with no overall programme, while the practical work is left entirely to a band of assistants. Such shortcomings are to be found more frequently in the universities situated in very large cities.

This is why we attach the highest importance to the working conditions of the professors and teaching staff. The differences not only between countries, but between universities in the same country, are, however, enormous. Let us say frankly that the status of the teachers and the general organization make for good or bad working conditions, but this is not enough. The quality of teachers, their ability to work as a team, and their devotion are just as important. But these qualities are wasted and stultified if an appropriate administrative framework does not exist.

In a number of countries the teaching of geography does not always reach university level. This is generally the case in Greece, in Italy, in Spain, and in certain Swiss universities. The organization of the studies and the small teaching staff do not allow students to be properly instructed in personal work. In particular in Italy teaching, essentially limited to lectures given to huge audiences, is ineffective. In Italy and in Spain there are still not enough assistants anywhere and their salaries remain too low to attract the necessary candidates, especially in Spain. The shortcomings due to the organization of the studies are further aggravated by the nature of the teaching given.

In a whole group of countries, such as in Germany (partly), Austria, France, Ireland, Switzerland (partly), and Turkey, the teaching staff is generally too small. There are too few assistants to teach the students how to work properly, and there is too little practical work. The teachers are often overworked and their timetables are too long. Only studies of long duration and a great expense of the students' energy ensure the maintenance of the standard of studies. But such a situation is the prelude to a crisis. It is more or less near, depending on the countries concerned. In Austria it is only beginning to be overcome. In France it has receded, thanks to the recent reform which gives additional importance to geography. In Turkey the crisis, which was serious, has just been resolved by new buildings and an increase in staff.

In a few countries like Great Britain, Norway, Sweden, Denmark, and Belgium at first-degree level the conditions for the teaching staff are good and the teachers can practically face up to their obligations, though seldom without being overworked. The difficulties in some countries such as Sweden arise from the organization of the studies, which do not provide time for an appropriate training.

Furthermore, the educational trend is wrong in some countries. There is a tendency to apply to higher education the conceptions of secondary education, which require that all the subjects appearing in the syllabus should be dealt with in class. This is the case, for example, in Belgium and in Ireland. The students have thus no opportunity to learn how to document themselves, which is in fact of prime importance. The same defect appears in those countries where the number of students is enormous and where no-one guides them in their personal work. The best solution is the British tutorial. But it requires considerable teaching staff.

Finally, we wish to underline a difficult problem which is more or less acute in practically all the universities—that of field work. Everywhere there are difficulties in financing it, even where there is sufficient teaching staff working under good conditions. This is an essential aspect of geography training. It seems that those responsible for funds are scarcely ever aware of the value of field work for the geographer and of the need for long-distance travel for the sake of change. Generally it is a case of making unofficial arrangements. These are, as a rule, more effective in those universities where the number of students is average or small. In Paris and London only a small proportion of the students can participate in field work, which is organized sporadically without any graded programme. It is probably in this area that the greatest disparities exist, and between different universities in the same country, which our table cannot bring out. *International co-operation in this particular area is desirable,* *especially for the organization of travel in other countries of the Council for Cultural Co-operation for the purposes of study.*

(3) MATERIAL CONDITIONS IN THE TRAINING OF STUDENTS

Without underestimating their importance, we shall disregard all the factors which are taken into account in the 'standard of living' of the student, such as financial resources (particularly scholarships), accommodation, food, which are not confined to geography students. We shall, therefore, examine only the facilities such as premises, books, equipment, and technical staff put at the disposal of the teachers which have a direct effect on the standard of the studies.

The differences which we have already noted between the Mediterranean countries and the others in the organization of the studies are even greater here. With a few exceptions, the authorities in Italy, Spain, and in Greece consider too often that their responsibilities to geographers are discharged when they offer them a room with a blackboard where they can conduct classes under the same conditions as a teacher of Latin or mathematics. No film projectors, few or no maps, nothing for practical work. No specialized rooms with the equipment needed for seminars, no aerial photographs, no stereoscopes, still fewer laboratories, skeleton libraries with room for five to ten persons. One is still at the stage, despite the meritorious efforts of some colleagues, when the teaching of geography was limited to reading and commenting on Strabo and Herodotus.

However, in the Scandinavian countries in general, in France, Britain, and Holland, and in a few German and Swiss universities geography has at last obtained the means comparable to those of the natural sciences to which it is so close, with work-rooms specially equipped, rooms for apparatus, research laboratories where sediments can be studied, samples of water analysed, and even a few experiments carried out, libraries, collections of maps, aerial photographs, and other documents for practical work. Under these conditions the student can receive real higher education.

Finally, in a third group of countries, the material equipment is substantial, but designed on the basis of the old methodology in geography. This applies, for example, to many universities in Great Britain, Germany, Switzerland, and Austria. There are libraries and collections of maps, but as yet neither aerial photographs nor the instruments for studying them, no laboratories where a sample of a surface formation can be examined, no climatological instruments.

Methodology in these universities is behind the times, and this is already reflected in research. These universities can no longer carry out key research and may gradually be left behind in a growing number of fields.

Naturally these specialized installations can function only to the extent that they have a staff to operate them. Geographers need librarians, laboratory technicians, draftsmen, and cartographers. It is essential that the teachers can draw maps and diagrams and have them reproduced and distributed to the students as basic maps for practical work or to illustrate lectures and exercises. These are the main tools of modern education, and are supplied in increasing number through technical advances to enable practically all these problems to be resolved. Unfortunately, geography institutes are still very much behindhand in reproduction equipment, just as they too often have a shortage of technical staff. Where there are vacancies it happens too frequently that the low salaries prevent the recruitment of efficient staff and those appointed are either insufficiently qualified or underemployed, the short hours of duty compensating for the poor salary.

These are the bottlenecks in all the disciplines, but they are particularly serious in geography, which is in a period of change. Its needs have altered, as have its conceptions. The situation varies greatly from one country to another according to the flexibility of the different types of organization, the eagerness of the geographers for new methods, and the authority of the leaders and their energy in adopting innovation and obtaining the means to finance it. In Great Britian there is generally a large staff, but it cannot be properly used through lack of funds; this delays the reform in concepts, with the result that one is confined to a somewhat outdated descriptive regional geography. In Austria projects are hampered, despite a clear view of the methodological problems, by a shortage of technical staff and funds. In other countries, such as Germany, laboratory methods have been developing rapidly since 1965. However, great differences still remain from one university to another. The policy regarding the training of students and the standard of their studies is an exact reflection of these differences. Some students can be employed without difficulty in regional development, or help with the inventory of natural resources, or participate in the development of the Third World, whereas others can teach only the traditional geography in secondary schools, which arouses but little enthusiasm. Apart from those countries which we have already cited, these differences are felt more between universities than between countries.

From the moment that a certain level of material means is granted, the quality of the teaching team plays a leading rôle in this differentiation, which means that the formal equivalence of diplomas is devoid of real meaning.

The very different situations, a consequence of the profound change through which geography is at present passing, are such that the importance of openings in our discipline is extremely varied. Even in countries where the studies are regulated in detail by the central authorities, as in France, some universities train geography specialists while others train only secondary-school teachers. It is, therefore, desirable that contacts should be increased, so that experiences can be compared and geography develop more rapidly, thereby providing modern society more rapidly with the services it expects.

S.C.E.R.T., West Bengal
Library
Calcutta
25/3, B. C. Road

TABLE 1 GENERAL ORGANIZATION OF TEACHING

Country	Place of Geography in Secondary Education	Conditions governing University Admission	Preparatory Teaching	System for Financing Studies
AUSTRIA	Fairly good	Secondary-education diploma (*Maturazeugnis*)	None	Fairly liberal
BELGIUM	Rather poor	Secondary education or equivalent diploma together with *Maturité* examination (Diploma of Aptitude)	*Candidature* (2 years)	Fairly liberal
DENMARK	Fairly good, study of environment, excursions	Secondary-education diploma (*Artium*)	None	Very liberal
FEDERAL REPUBLIC OF GERMANY	Average, study of environment, excursions	Secondary-education diploma (*Abitur*)	None	Very liberal
FRANCE	Fairly good, teaching too encyclopaedic	Diploma at end of secondary-school studies (*Baccalauréat*)	None	Fairly liberal
GREECE	Poor, teaching encyclopaedic, teachers not specialized	Diploma at end of secondary-school studies and *Certificat académique*	None	Fairly liberal

ICELAND	Inadequate (only during first years). Reform taking place to introduce geography as an optional subject in senior classes	Diploma at end of secondary-school studies	None	Fairly liberal
IRELAND	Varies, often according to choice, reform in progress	Diploma at end of secondary-school studies or entrance examination (geography may be a subject)	None	Not very liberal (few scholarships)
ITALY	Poor, teaching encyclopaedic, specialized teachers. In technical education only	Diploma at end of secondary-school studies, competition for normal school students	None	Fairly liberal
NETHERLANDS	Fairly important, oriented either towards nature or human problems	Examination at end of secondary-school studies with limitations for literary studies (only in Arts faculty)	Varies	Fairly liberal
NORWAY	Rather poor (not taught during last 2 years)	Diploma at end of secondary-school studies (*Artium*)	None	Fairly liberal

TABLE 1 GENERAL ORGANIZATION OF TEACHING—continued

Country	Place of Geography in Secondary Education	Conditions governing University Admission	Preparatory Teaching	System for Financing Studies
SPAIN	Poor, out-dated teaching sometimes given by non-specialists	Diploma at end of secondary-school studies (*Bachillerato*), then preparatory year	Preparatory year and examination (*Pre-universitario*) without geography	Not very liberal
SWEDEN	Rather poor, geography recently abolished as an independent discipline (last 3 years). Study of environment	Diploma at end of secondary-school studies	None	Very liberal
SWITZERLAND	Varies greatly, generally inadequate	Varies, admission generally by diplomas (diploma at end of secondary-school studies), fairly liberal	Varies	Often very expensive, few scholarships. Liberalization in progress
TURKEY	Fairly important regional disparities	Diploma at end of secondary-school studies and entrance examination	None	Fairly liberal (too few scholarships)
UNITED KINGDOM	Varies greatly, often optional. Efforts at reform	Places limited. Entrance examination, guidance	None	Liberal

TABLE 2 GENERAL ORGANIZATION OF STUDIES

Country	Faculty to which Geography is attached	Duration of Basic Studies[1]	Diplomas attesting Basic Studies
AUSTRIA	Faculty of Philosophy (Arts and Sciences)	4 years (5–6 years generally)	*Lehramtsprüfung* (teaching diploma) and *Diplom* (with dissertation and written and oral tests)
BELGIUM	Faculty of Sciences	4 years	2 years: *Candidature* 2 following years: *Licence*
DENMARK	Faculty of Sciences	5 years	*Candidatus Scientiarum* or *Magister Scientiarum* (dissertation, written and oral tests)
FEDERAL REPUBLIC OF GERMANY	Faculty of Sciences in general, also through Faculty of Letters	4 years (5–5½ years)	*Staatsexamen* (State examination) or *Diplom* (dissertation and oral tests)
FRANCE	Faculty of Letters	4 years (new system)	2 years: *Diplôme Universitaire d'Etudes Littéraires* (*D.U.E.L.*), with additional year (*Licence*) 2 years after *D.U.E.L.*; *Maîtrise* (Master's degree)
ICELAND	Faculty of Letters (Faculty of Sciences is being organized)	3 years (3½ years)	Specialized studies are pursued abroad as a matter of course

---

[1] The actual average duration of the studies is shown in brackets after the theoretical minimum where the two differ.

TABLE 2 GENERAL ORGANIZATION OF STUDIES—continued

Country	Faculty to which Geography is attached	Duration of Basic Studies[1]	Diplomas attesting Basic Studies
IRELAND	Faculty of Letters (Arts Faculty) Faculty of Sciences	3–4 years (6 years maximum)	Bachelor (General and Honours degree, former with dissertation)
ITALY	Faculty of Sciences Faculty of Letters (*Facoltà di Magistero*) Faculty of Political Science Faculty of Economics and Commerce	4 years	*Laurea* (*Licence* or degree)
NETHERLANDS	Faculties of Economics, Social Sciences, and Arts. Interfaculty geography and pre-history	3 years (3½–4 years); 5 years (6 or 7 years)	*Kandidaat* in 3 years (in theory). *Doctorandus* in 5 years (in theory)
NORWAY	Faculty of Sciences (open to students of the Faculty of Letters) Faculty of Letters Faculty of Social Sciences	4 years or 6 years according to course of study	Faculty of Letters: *Candidatus Magisteri* (4½ years); *Candidatus Philologiae* (6 years). Faculty of Sciences: *Candidatus Magisteri* (4 years); *Candidatus Realium* (6 years). Dissertation for higher degree

SPAIN	Faculty of Letters	5 years	2 years of *Comunes* (general studies), then 3 years for the *Licenciatura* (*Licence* or degree with dissertation)
SWEDEN	Faculty of Sciences (physical geography) Faculty of Social Sciences or Faculty of Economics (human geography)	3 years (3½–4 years)	*Filosofi Magister* awarded to students with 6 marks (1 mark corresponds to a semester of studies and passing an examination) and other equivalent examinations. Reform to be introduced
SWITZERLAND	Faculty of Letters in French-speaking Switzerland and in Basle Faculty of Sciences in German-speaking Switzerland	Varies	*Diplôme, Doctorat, Licence* (French-speaking Switzerland) *Diplom, Doktorat* (German-speaking Switzerland)
TURKEY	Faculty of Letters, also through any faculty	4 years (4–5 years)	Degree
UNITED KINGDOM	Arts Faculty Faculty of Sciences (Natural or Social) 'School' at University of Sussex	Varies (3 and 4 years)	2 levels; the diplomas vary from one university to another and from one faculty to another. B.A. Honours (England and Wales) and M.A. Honours (Scotland) degree

---

[1] The actual average duration of the studies is shown in brackets after the theoretical minimum where the two differ.

TABLE 3 PLACE OF GEOGRAPHY IN HIGHER EDUCATION

Country	Faculties in which Students are enrolled	Relations between Geography and the Other Disciplines	Duration and Place of Geography in the Studies
AUSTRIA	Faculty of Philosophy	Geography, main subject, but courses in related disciplines: geology, economics (2 universities out of 4). A second subject	About 50% of 8 prescribed semesters, or 2 complete years
BELGIUM	Faculty of Sciences	*Candidature*, very limited specialization; *Licence*, specialized with dissertation	Average of 15% for 2 years; average of 90% for 2 years; average of 55% over 4 years, or the equivalent of 2 full years
DENMARK	Faculty of Sciences	Geography, main subject, 2 or 3 complementary subjects, including geology, which is compulsory	In theory, about 50% of entire 8 semesters, or about 2 complete years
FEDERAL REPUBLIC OF GERMANY	Faculty of Sciences or Faculty of Letters	Geography, main subject, a second subject in the same faculty	About 50% of the 8 prescribed semesters, or 2 full years

FRANCE	Faculty of Letters	Compulsory combination with history during the first 2 years, flexible arrangement in optional subjects thereafter (*Maîtrise*)	60% for 2 years, 80–100% for 2 years, about 3 complete years on an average
GREECE	Faculty of Sciences Faculty of Law Faculty of Economics Pandios School of Political Science	Only physical geography, very minor place in degree in natural sciences. Physical geography (Athens). Economic geography (Faculty of Law and Pandios School)	About 10% for 4 years, about 0·4% of the whole
ICELAND	Faculty of Letters (Faculty of Sciences in course of organization)	Free choice of 3 compulsory subjects. Main subject studied for 3 semesters out of 6	50% for 3 years (specialization abroad 1½ years)
IRELAND	Faculty of Sciences Faculty of Letters (Arts Faculty)	Faculty of Sciences 2 years, geography main subject, choice of 2 additional subjects, a single subject in 3rd year, geography only in 4th year. Arts Faculty, 1st year: geography and 2 or 3 other disciplines. Other years: geography and 1 or 2 other disciplines	Faculty of Science: equivalent of 3 full years (out of 4-year course). Faculty of Letters: equivalent of 1¼ full years (out of 3 or 4 years' course)

TABLE 3 PLACE OF GEOGRAPHY IN HIGHER EDUCATION—continued

Country	Faculties in which Students are enrolled	Relations between Geography and the Other Disciplines	Duration and Place of Geography in the Studies
ITALY	Faculty of Letters *Facoltà di Magistero* Faculty of Sciences Faculty of Economics and Commerce Faculty of Political Sciences	A few courses in non-specialized degree. No specialization except for a dissertation	About 10% for 1 or 2 years, 40% for 1 year (dissertation). 6 months
NETHERLANDS	Faculty of Social Sciences and Faculty of Sciences for specialization in geography (for teachers). Interfaculty geography and pre-history (for students)	Physical or social geography main subject, second subject in another branch, in addition to 2 or 3 optional subjects	About 50% of geography for 3 years of *Kandidaat*. But specialization from beginning in physical geography or social geography. No regional geography
NORWAY	Faculty of Letters Faculty of Sciences	*Candidatus Magisteri*, 2 or 3 semesters in the main subject, freedom to choose second subject or subjects	1–1½ full years
SPAIN	Faculty of Letters	Geography compulsory subject in history degree from 3rd year in faculty. Madrid and Barcelona: specialized degree in 3 years	10% for 2 years, 20% for 3 years. 0·75% of total. 100% 3 complete years

SWEDEN	Faculty of Sciences (physical geography) Faculty of Economics (human geography)	3 subjects, series of compulsory combinations. Main subject 3 semesters. Reformed in 1968	1–1½ full years
SWITZERLAND	Faculty of Letters or Faculty of Sciences according to university	French-speaking Switzerland: non-specialized *Licence*, free choice of subjects. German-speaking Switzerland: close to German system, with some variety	Very varied, 1 week to 2–2½ complete years
TURKEY	Faculty of Letters, but second subject available to students of all faculties	Degree in 8 semesters. One main subject is allowed or can form 50% or 75%, with optional second subject, supervised by professor	4 complete years, or 3 or 2 for semi-specialized students
UNITED KINGDOM	Faculty of Arts Faculty of Sciences	Training based on geography with flexibility in optional or compulsory related subjects	60–100% for 3 or 4 years, 2–4 complete years

TABLE 4 ORGANIZATION OF THE EXAMINATIONS (PART I)

Country	Controlling Body	Place in the Course of the Studies	Type and Duration of Examinations, Written and Oral
AUSTRIA	Ministerial regulations. Considerable freedom granted to universities and professors	Official final examination, half-yearly examination beforehand	A written examination of 8 hours in 2 or 3 parts according to universities
BELGIUM	Very precise Ministerial regulations	Annual, 2 sessions (July and October)	Only oral examinations, except for practical tests in certain branches of the *Candidature*
DENMARK	Faculty is authorization of the Ministry	Comprehensive examination at end of 2 years and half-yearly examinations. 2 sessions annually (January and June)	Practical work very important for M.A. level, 4 hours' written, oral, 30–60 minutes for each examination
FEDERAL REPUBLIC OF GERMANY	*Staatsexamen*: *Länder* (university programme of tests)	Formerly only one final examination after minimum of 8 semesters. Recently 2 examinations at end of 6th and 8th semesters	Generally 1 paper of 4 hours (*Klausur*)
FRANCE	Very detailed Ministerial regulations specifying types of tests under new system	Annual examinations for first 2 years, certificates for last 2 years	The process is to eliminate. 1 paper of 3 or 4 hours, except for specialization certificates

GREECE	(Only physical geography in the University of Athens)	Simple check in one subject among many others	Series of questions
ICELAND	Ministry, after consultation with university	1 examination for each half-yearly enrolment	Written
IRELAND	University enjoys full freedom	Annual examination	Written only except for last year. Paper of 3 hours in each subject
ITALY	Ministry for examinations, professors for tests	One examination for each subject, after 1 or 2 years. 3 annual sessions	Very rarely written. Sometimes organized on the basis of elimination
NETHERLANDS	Ministerial regulations for *Kandidaat*. University freedom for *Tentamen*	Comprehensive examination in theory at end of 3 years, in fact partial examination at any time after minimum regulation period (*Tentamen*)	Tentamen: written or oral, comprising practical work. *Kandidaat*: oral tests only (3 of 20 minutes each)
NORWAY	Ministry	Oslo: at end of each course; only 1 annual session, except for dissertation (2). Bergen: 2 annual sessions	At Oslo, total of 3, 1 of 8 hours for each branch at the elementary level. 1 or 2 of 10 hours each at other levels. At Bergen, 2 of 8 hours and oral
SPAIN	Professors have full freedom	Examination for each subject appearing in syllabus each year, 2 or 3 sessions	Duration of 2 and 4 hours, very often composed of list of questions (5–10)

TABLE 4 ORGANIZATION OF THE EXAMINATIONS (PART I)—continued

Country	Controlling Body	Place in the Course of the Studies	Type and Duration of Examinations, Written and Oral
SWEDEN	Universities within framework laid down by Government	Partial examinations corresponding to each of the 3 levels of studies (1, 2, or 3 marks)	Takes place after practical work, duration 1–5 hours, either paper or list of questions
SWITZERLAND	Universities and cantons	System very varied	Written examinations in almost all universities, duration very varied
TURKEY	Universities	1 eliminating examination at end of the 1st year, then certificates after various periods. Main certificate 3 years, others 2 years	Written eliminating examination. For each subject a paper of 3 hours, with tendency to be replaced by lists of questions
UNITED KINGDOM	Universities enjoy complete freedom	Final examination on all branches of main subject	Written examinations preferred. Generally 1 paper of 3 hours per branch, sometimes more

TABLE 4 ORGANIZATION OF THE EXAMINATIONS (PART II)

Country	Written Part (Continued) and Practical Work	Dissertation	Oral	Remarks
AUSTRIA	Varies. In Graz replaced by annual marks	*Doktorat* and degree (*Diplom*)	Several: *Diplom* 1–2 hours; *Doktorat*, 2 hours	System varies in details according to the university
BELGIUM	Only practical examinations for certain branches of the *Candidature*	Compulsory at end of studies (dissertation for *Licence*)	Conditions very varied according to numbers (5–60 minutes by branch, 20–120 minutes generally in geography)	Students should have as a rule 6 out of 10 for each subject. System rigid, at least in theory
DENMARK	Commentaries on maps, report on field work, and practice course in field work (M.A.)	None	At each examination	Examination on each subject
FEDERAL REPUBLIC OF GERMANY	In general, commentary on maps; 3–5 hours	On main subject in *Staatsexamen*, and in addition for *Diplom*	In general, 30–60 minutes	System very varied in details (particularly as to length of examinations)

TABLE 4 ORGANIZATION OF THE EXAMINATIONS (PART II)—continued

Country	Written Part (Continued) and Practical Work	Dissertation	Oral	Remarks
FRANCE	Always written, 3 hours only for *Licence* (may not take place because of the organization of examinations)	Not compulsory, choice between various systems	In all examinations one or several of 15–20 minutes each	In some certificates for *Maîtrise*, oral only
GREECE		None	None	Standard very low, memorizing
ICELAND	Standard low	Short dissertation on local subject	None	
IRELAND	One in each subject, 3 hours	Compulsory for Honours degree	As a check, except in 4th year (discussion of dissertation)	Work done during year is taken into consideration
ITALY	Occasionally. Generally oral (very short)	Compulsory, but rarely in geography	Very short, 20–40 minutes	Standard very changeable
NETHERLANDS	Commentaries on maps, laboratory work, (physical geography), and field work. Surveys (social geography) only in *Tentamen*	Short dissertation in *Candidature*. Important dissertations for *Doctorandus*	In theory only in *Candidature*, 3 orals of 20 minutes each	Very varied system for the *Tentamen*, which are all important, standard for official examination

NORWAY	Eliminating at elementary level. Dissertations later	Papers on field work at intermediate level, dissertation at higher level	Intermediate level 1 hour. Higher level 1½ hours	Details vary according to faculties and universities
SPAIN	Not everywhere. In general written (2–4 hours), sometimes orals	Compulsory (*Tesina*) chosen by few students only	Reduced to check of doubtful cases, short	Examination standard varies considerably, satisfactory standard for specialization
SWEDEN	Eliminating and preliminary to other examinations	Only for students with 3 points	Does not exist in all universities, limited to check	Differences between universities (number and length of examinations)
SWITZERLAND	Not in all universities. However, in majority	In Doctorate	Usual, varies greatly in importance	Very great differences in university systems
TURKEY	During 3 hours, oral examinations	Compulsory in the subject chosen	Number of questions at discretion of jury	The system aims at a severe check on the work done
UNITED KINGDOM	Important even in second subjects	Frequently at end of studies	Mostly as a check. Discussion of dissertation	Very great variety, but examination in each subject

TABLE 5 ORGANIZATIONAL FACTORS

Country	Timetables		Staff/Student Ratio	Practical Work	
	Professors	Assistants		Field	Classroom
AUSTRIA	In theory, unlimited, 6–8 hours	Variable, plus administrative work	Inadequate, 1/70 to 1/50	Varies, 10–30 days	Fairly considerable, 45–60% of teaching hours
BELGIUM	5–10 hours	8–13 hours	Inadequate for *Candidature*, good for *Licence*, 1/10	For *Licence*, 15–20 days	Equal to 40–100% of corresponding courses
DENMARK	1–6 hours	6–8 hours	1/15 to 1/20, satisfactory	Considerable, 20–30 days	Low (inadequate staff), 4 hours of practical work per week only. 2 hours of supervised work
FEDERAL REPUBLIC OF GERMANY	3–8 hours	2–4 hours, but administrative work	Varies, often inadequate, 1/15 to 1/150	Considerable, varies, 20–25 days	Seminar, study of varied documents, papers. Very important

FRANCE	3–6 hours, normally 3 hours	5–6 hours. Must carry out research	Scarcely adequate to adequate, 1/20 to 1/30	Often 10–15 days, insufficient (Paris, etc.), no provision in regulations	Work on documents, papers insufficient
GREECE	2–3 hours (Faculty of Sciences, Athens)	10–15 hours		Practically none	Insignificant, very insufficient
ICELAND	Large part of courses given by external lecturers, 1 professor		Poor, shortage of permanent staff	Insufficient except for physical geography (15 days)	Insufficient, lack of assistants
IRELAND	7–10 hours	5 hours plus administrative work	Inadequate, about 1/50	18–25 days. Distant travel	Insufficient work on documents. 10–25% of hours in course
ITALY	3 hours (in theory)	6–10 hours	Wholly inadequate, 1/50 to 1/400 (!)	Practically none, with some exceptions	Practically none or very little

TABLE 5 ORGANIZATIONAL FACTORS—continued

Country	Timetables		Staff/Student Ratio	Practical Work	
	Professors	Assistants		Field	Classroom
NETHERLANDS	3–6 hours	4–8 hours	1/8 to 1/20: satisfactory	Considerable and advanced, courses of several weeks in physical geography each year. Surveys in social geography	Considerable. Work varies according to universities
NORWAY	5 hours	Officially 8 hours, in fact higher	1/8 to 1/10: satisfactory	10–15 days for *Candidatus Magisteri*	Work on documents, lectures discussed. About 80% of hours in course
SPAIN	6–15 hours	Low, due to poor salaries	Very inadequate, 1/30 to 1/200 (!)	Very rare, 10–15 days	Non-existent to insignificant, lack of means except in 3 or 4 universities

SWEDEN	*Professors and lecturers*	Variable, 3–4 hours, research compulsory up to maximum of 12 hours	Very satisfactory, adjusted automatically to 1/15	10–15 days. Fixed timetables	Excellent. Documents very varied, tutorials. Supplementary timetables
SWITZERLAND	6–15 hours	No general rule (somewhat excessive)	Generally inadequate	Rarely sufficient (German-speaking Switzerland)	Very varied according to organization of studies. Insignificant to satisfactory
TURKEY	5–6 hours, no regulations	Varies. No regulations. Administration in addition	Inadequate, 1/60 to 1/80	5–6 hours. Insufficient	Poor standard, inadequate staff and means
UNITED KINGDOM	4–8 hours	5–10 hours plus administrative work	Generally excellent. 1/6 to 1/30	In general 15–20 days. Distant travel	Considerable, documentary work, tutorials. 60–70% of hours in course for practical work

TABLE 6 EQUIPMENT AND TECHNICAL STAFF

Country	Specialized Buildings	Specialized Libraries	Collections of Maps and Aerial Photographs	Laboratories	Technical Staff /Student Ratio
AUSTRIA	Area varies in all universities	Varies, in some cases insufficient	Varies, in some cases insufficient	None	1/4 to 1/6, very inadequate
BELGIUM	Same. Construction in progress or planned	In all universities, average size	In all universities, fairly large collections	In all universities	Generally insufficient, 1/4 to 1/5
DENMARK	Considerable	Very large	Large	Excellent, very well equipped	Considerable, about 1/1
FEDERAL REPUBLIC OF GERMANY	In all universities. Area varies	In all universities, often large	Practically in all universities, except aerial photographs	Increasing, several in use, several in construction	1/2 to 1/4, rarely sufficient
FRANCE	Some	In all universities, in some cases very large	In all universities, difficulties for practical work (number of copies)	In almost all universities, excellent in some cases	Insufficient, 1/2 to 1/4. Main difficulty in organization of teaching

ICELAND			Insignificant. Very insufficient		
IRELAND	Insufficient though recent	Small, insufficient	Nearly sufficient, increase desired	Rare	Increase desired, 1/1·5
ITALY	Very insufficient	Very rare	Very insufficient		Practically none, very insufficient
NETHERLANDS	In all universities. Situation satisfactory	In all universities, large to very large	Current use of aerial photographs, large and varied collections	Usual for physical geography, equipment good to remarkable	Considerable, especially geography. 1/2 in social geography, 1/5 to 4/1 in physical geography
NORWAY	In all universities, fairly good to good	Good	Good, insufficient foreign maps and photographs	In Oslo, those of geologists, small geomorphological laboratories	Insufficient, main difficulty being 1/2 to 1/4
SPAIN	With exceptions, practically none	Insignificant, except in 3 or 4 universities	Very rare. Being built up in a few universities	None	Non-existent

TABLE 6 EQUIPMENT AND TECHNICAL STAFF—continued

Country	Specialized Buildings	Specialized Libraries	Collections of Maps and Aerial Photographs	Laboratories	Technical Staff /Student Ratio
SWEDEN	Uppsala, excellent, otherwise sometimes insufficient	Generally good	Generally good except for aerial photographs	Great majority excellent	Considered insufficient
SWITZERLAND	From very insufficient to good	Insignificant (French-speaking Switzerland) to good	Insignificant to good	Very rare (Zürich)	Generally insufficient, even non-existent
TURKEY	In all universities, but too limited	Insufficient	Insufficient, difficulty because of military secrecy		Very insufficient, 1/6 to 1/8
UNITED KINGDOM	Practically in all universities, varies	In all universities, but insufficient in some cases	In all universities, sometimes insufficient. Improvements being made	Rare	Satisfactory with certain exceptions, generally 1/1

General Conclusions

The picture which emerges at the end of this report is one of confusion and incoherence. Geography in the European universities, buffeted between the faculties of sciences and arts, even economics, is rarely in a position to develop. Geographical research, despite the means too often sparingly accorded, seeks merely to develop and to make the most useful contribution to the solution of the problems which increasingly occupy the attention of Governments.

The *problem of geography* does exist.

The present chaos is the result of rapid change, internal change due to a modification of the very concepts of the discipline itself, and external change due to the conditions of its position in society.

Geography has made much progress in the last hundred years, and especially since the Second World War. Formerly a mnemotechnic discipline, rarely going beyond the stage of picturesque description and an introduction to history, describing the background of events, it has now become the science of terrestrial space, the discipline which studies the spatial distribution of resources and human activities. It controls one of the two co-ordinates of all concrete knowledge and all actions—space alongside time. Its aim is no longer to provide a more or less literary picture, a kind of introduction to a travel guide, but a factor in the essential understanding of the modern world, almost a concrete philosophy. The organization of space as the framework of human activity, whether it is productive work or rest and relaxation, is its field, its real purpose.

Instead of serving as a humble stepping-stone to history, geography is now integrated in the natural sciences, economics, the social sciences, and in an interdisciplinary work directed towards the present, but capable of influencing the future. The study of the physico-geographical environment is an essential link between the various natural sciences and leads directly to ecology, to the knowledge of the delicate balance between living beings and their environment and the changes, voluntary or otherwise, which man brings to that balance. All societies, all economies, are projected on a space, which is geographical—that is, varied, complex, and changing. Economists are becoming increasingly aware of this and are trying to integrate it in their arguments, even if it makes them more complicated. If they wish to be effective they must abandon the extravagant simplification of a homogeneous space and acknowledge the geographical, heterogeneous, and changing space. The failure of American geographers has led the economists in the United States to remake geography under another name—regional science. The trend has been exported to Europe.

This development has been rapid since the Second World War, although it has its roots in the work of much older forerunners. Its new characteristics explain many things. In some countries, like Spain, Greece, France, Italy, French-speaking Switzerland, secondary education is still based on the old conception of geography. The encyclopaedic curricula continue to provide a panorama of the world. The discipline, despite a few unsuccessful efforts, remains essentially mnemotechnic. Geography is still subordinate to history. The example of France, whose universities are, however, in the forefront of research, is significant. Secondary education has scarcely been reformed at all, and the teacher of history and geography is chiefly a historian. The great problems of regional development are only rarely and briefly mentioned in the textbooks and passed over in silence in nearly all courses. A reform—very timid, but authoritative in its methods—still does not give geography the opportunity of developing fully as the meeting-place of the disciplines, which, at the risk of perishing, it must be. This situation is a particular characteristic of the countries where higher education is closely controlled by the State; this is tantamount to forcing it to comply with the conceptions of secondary education, the latter being the principal employer of university graduates.

In countries, however, such as Great Britain and Norway, and in some Swiss and German universities, the pressure of secondary education is considerably less and higher education is freer to organize itself on the basis of concepts stemming from progress in research. It is, on the contrary, secondary education which is influenced by higher education, even if this influence is hard to assess because of the particular problems caused by the rapid and considerable growth of numbers and the resultant difficulties of adaptation. While the distribution of the students' time between different disciplines is often a source of dispersion, geography can, to some extent, be a meeting-place. It is not subordinate to history, or drowned in a dissimilar and encyclopaedic literary training. Changes of detail, especially in the co-ordination of the teaching of different subjects and in the choice of related disciplines, would lead to a satisfactory situation. Flexibility and a choice of optional subjects are essential, and should be carried to the highest degree in the Turkish system. The geographer can be the product either of the faculties of letters or the faculties of science, although occasionally there still remain a few traditional attitudes which would relegate geography to the ranks of the minor disciplines, as in Germany, where it is sometimes associated with music and gymnastics.

The place of geography in society is in process of thorough change. The *laissez-faire* of liberal capitalism of the nineteenth century has practically disappeared. In all European countries the State intervenes in economic and social problems. The last World War was decisive in this development and in this change of political philosophy. The State considers it to be its duty to intervene in matters concerning the equipment and development of towns, in the safeguarding of certain sites, in regional development, and in the economic and social equilibrium between the various parts of its territory. It thus creates a market for applied geography. This intervention cannot be made either from the purely technical point of view alone or under pressure from private interests, however respectable they may be. A global view is necessary. This corresponds with the modern conception of geography. This global view must rest on a thorough and objective knowledge of the facts. This implies analyses in which geography has a part, together with economics, the social sciences, the natural sciences, and the techniques of the engineer. It is necessary to identify the various factors which control the equilibrium in order to find where action can be taken with the greatest chance of success. Certainly geography alone is not sufficient and must not take the place of political and administrative authority. But it has its rôle to play within the framework of interdisciplinary work and in making known the very nature of the problems which, in spatial development and the war on underdevelopment, coincide closely with its object and form part of its conception.

It is fortunate that the very evolution of our society, in which the pre-eminence of man is more and more widely recognized and the growing social preoccupations are moderating the concepts of profit, coincides with that of our discipline. The modern development of geography, the profound change, its concepts, its association with other disciplines, and its continuous relationship to spatial organization make for a fruitful meeting. The justification of geography lies in its synthetic character, in its capacity to understand, from a wide angle of vision, the interaction of increasingly numerous and complex factors which demand the spatial inclusion of human activities. If geography is diluted in a series of detailed analytical studies and loses this global spatial view, it is doomed. If, on the contrary, it develops it, it will be able to meet the needs of our society.

In our opinion this is the criterion which must guide the organization of higher studies in geography in 1969. The need of society exists. Our discipline is capable of meeting it, as a certain number of successful experiments can show. Geography must meet it even more and co-operate more effectively with current change. Society will gain thereby, as will geography.

The present confused situation is, indeed, the result of the change mentioned above. In some countries the organization of university studies is still dominated by outworn conceptions which reflect the past, the aim of geography being to participate, in a minor position, only in the training of secondary-school teachers, guardians of an outdated tradition. The pupils turn away from this fossilized and uninteresting discipline. The television and cinema do much more to arouse the curosity of children to the modern world and its diversities than summaries dictated in a dreary voice. This kind of geography is doomed to rapid extinction like prehistoric creatures in the periods when new and better-adapted species made their appearance.

Caught in an inevitably vicious circle, the higher teaching of geography, when orientated in this way, cannot train geographers who will be useful to society. It teaches useless things and is unable to assimilate methods which will arm the geographer for the struggle in applied geography or for interdisciplinary work, which is becoming increasingly necessary. Others will satisfy the existing requirements. The engineers, the economists, the agronomists, the sociologists, do the work of the geographers more or less consciously, more or less cleverly, but do not always succeed in finding by self-taught efforts what a proper training in geography, which they lack, would have taught them. In some cases, where higher teaching allows its members the opportunity of engaging in research, as in France, geographers for their part, fed on history, make the same efforts to teach themselves and assimilate at the cost of great difficulty concepts of the natural sciences, sociology, and economics, and succeed as best they can in safeguarding geography and allowing it to develop—a double paradox which borders on the absurd. Such a situation cannot continue without ending in a dilemma. The fossilized geography of the secondary-school teachers is doomed to die; there are too many new and interesting things to teach the children for its present timetables to continue to exist. On the other hand, the modern geography of the self-taught cannot be maintained for long if it does not train students in terms of geography's own needs, since the accelerated progress of the other disciplines puts them beyond the reach of the self-taught. Can one teach oneself nuclear physics?

Another way is open to geography which, if followed, will establish its scientific maturity. The broad lines of modern geography are already drawn. They will enable geography to be integrated in the contemporary evolution of society and will ensure its future by changing at the same speed as it. It is this geography which must be the subject of basic university teaching. It will provide experts and efficient secondary-school teachers alike. It will create the conditions of reform in secondary education, which as a result will be fit to train citizens by making them aware of the countless and complex problems involved in spatial development, expansion, and the intervention of physico-geographical and human factors in the geographical equilibria and their preservation.

It is therefore necessary that geography, like the other sciences, should have its own place in the universities. This means that the teaching of geography in secondary education by true geographers will follow the progress of research and adapt itself to new concepts and that university education will not trail behind a traditional and outdated secondary education. Is this not the case in physics, chemistry, biology, economics, and the social sciences? Do the secondary-school curricula of forty years ago dictate the training of biologists, physicists, and chemists in the universities? Geography must be taught in the universities for its own sake, from within. This implies the rejection of those systems which make geography an auxiliary discipline of history, or drown it in an encyclopaedic training, or associate it with incongruous subjects designed only to facilitate the recruitment of general secondary-school teachers.

Few European countries have as yet become aware of these needs. The types of organization which we consider outdated and doomed are still to be found in most European countries. They are merely expedients, and as they have to deal with different situations in secondary education they are necessarily incongruous and impossible to simplify. The situation is, hence, chaotic. As a result, there is no equivalence in the training provided except in special cases and on limited points. We have, therefore, merely stated the problem of geography. Our fervent wish is that it be resolved in a forward-looking and European spirit, which means taking from the experience of each that which is most appropriate.

Appendix 1

MEETING OF EXPERTS, TEACHING OF GEOGRAPHY AT UNIVERSITY LEVEL, STRASBOURG, MARCH 6th–8th, 1967

LIST OF PARTICIPANTS

Austria
Professor F. Fliri, Institute of Geography, University of Innsbruck.
Professor H. Bobek, Institute of Geography, University of Vienna.

Cyprus
Dr F. Maratheftis, Academy of Pedagogy, Nicosia.

Denmark
Professor A. Schou, Institute of Geography, University of Copenhagen.

Federal Republic of Germany
Professor H. Mensching, Technische Hochschule, Hanover.

France
Professor J. Tricart, Institut de Géographie Appliquée, University of Strasbourg.

Greece
Professor S. Poulopoulos, Department of Economic Geography, University of Salonika.

Ireland
Professor J. B. Haughton, Department of Geography, Trinity College, University of Dublin.
Professor T. J. Hughes, Department of Geography, University College, Dublin, National University of Ireland.

Italy
Professor G. Morandini, Department of Geography, University of Padua.
Professor O. Baldacci, Department of Geography, University of Rome.

Netherlands
Professor D. J. Wiggers, Institute of Physical Geography, Free University of Amsterdam.

Norway
Dr G. Ramsli, Institute of Geography, University of Oslo.
Dr J. C. Hansen, Norwegian School of Economic Sciences and Business Administration, Bergen.

Spain
Professor Vila Valenti, Department of Geography, University of Barcelona.

Sweden

Professor A. Sundborg, Institute of Physical Geography, University of Uppsala.

Professor S. Helmfrid, Institute of Human Geography, University of Stockholm.

Switzerland

Professor E. Winkler, Federal Polytechnic School, Zürich.

Professor J. P. Portmann, Institute of Geography, University of Neuchâtel.

Turkey

Professor S. Erinç, Institute of Geography, University of Istanbul.

United Kingdom

Professor E. M. Yates, King's College, University of London.

ADVISERS TO THE RAPPORTEUR

Dr Hans Boesch, International Geographical Union, Institute of Geography, University of Zürich.

Mr Christians, Maître de Conférence, University of Liège.

OBSERVER

Professor Veikko Okko, University of Helsinki, Finland.

Appendix 2

MEETING OF EXPERTS, TEACHING OF GEOGRAPHY AT UNIVERSITY LEVEL, STRASBOURG, MARCH 6th–8th, 1967

RECOMMENDATIONS

(1) *Organization of Studies*

The peculiar characteristics of geography are such that geographers cannot be trained unless there exist at university level:

(*a*) Specialized studies based on geography and comprising the related subjects considered necessary or useful by the geographers themselves, of an approximate duration of four years.

(*b*) Specially designed premises, to be used solely for the use of geographers for combined research and teaching with an appropriate technical staff.

Given the importance of geography for the understanding of contemporary problems, notably those of regional development, the balance between population and resources, development, and urbanization, the experts, meeting under the auspices of the Committee for Higher Education and Research of the Council for Cultural Co-operation, express the wish that these conditions be carried into effect as soon as possible in member countries, and that the components of geographical training be included in the studies of related specialized subjects in order to develop the forms of interdisciplinary work, in which geography has a rôle to play.

(2) *Development of Relations*

The meeting of experts illustrated the inadequate contacts between European geographers. It is highly desirable that the following activities be developed:

(*a*) Exchanges of university staff and research workers in the form of 'colloquia', seminars, juries for theses, and personal contacts.

(*b*) Exchange of information on the possibilities of study travel and participation in various activities of immediate interest to the geographer.

(*c*) University study travel in the other member countries of the Council for Cultural Co-operation, associating teachers of various countries in the students' training.

(*d*) The exchange of professional and scientific documentation and, especially, the systematic translation of such documentation into the principal scientific languages.

The experts urgently request the Committee for Higher Education and Research to take such measures as will ensure the implementation of this programme. In particular, they express the wish that assistance be given to those countries which require it, for the organization of the modern university teaching of geography and for the promotion of geographical research.

SALES AGENTS FOR PUBLICATION OF THE COUNCIL OF EUROPE

AUSTRIA
Gerold & Co.
Graben 31
Vienna, 1

BELGIUM
Agence et Messageries de la Presse
14–22 rue du Persil
Brussels

CANADA
Queen's Printer
Ottawa

DENMARK
Ejnard Munksgaard
Nörregade 6
Copenhagen

FRANCE
Librairie Générale de Droit et de Jurisprudence
R. Pichon et R. Durand-Auzias
20 rue Soufflot
Paris Ve
Armand Colin
103 Boulevard St Michel
Paris V

FEDERAL REPUBLIC OF GERMANY
Verlag Dr Hans Heger
Goethestrasse 54, Postfach 821
5320 Bad Godesberg

GREECE
Librairie Kauffmann
21 rue Stadiou
Athens

ICELAND
Snaebjorn Jonsson & Co. A.F.
The English Bookshop
Hafnarstroeti 9
Reykjavik

IRELAND
Stationery Office
Dublin

ITALY
Libreria Commissionaria Sansoni
Via Lamarmora 45
Florence

LUXEMBOURG
Librairie-Papeterie
Galerie d'Art
Paul Bruck
22 Grand-rue
Luxembourg

NETHERLANDS
N. V. Martinus Nijhoff
Lange Voorhout 9
The Hague

NEW ZEALAND
Government Printing Office
20 Molesworth Street
Wellington

NORWAY
A/S Bokhjörnet
Olaf Thommessen
Akersgt. 41
Oslo

PORTUGAL
Livraria Bertrand
73–75 rua Garrett
Lisbon

SPAIN
Aguilar S.A. de Ediciones
Juan Bravo 38
Madrid

SWEDEN
Aktiebolaget C.E. Fritze
Kungl. Hovbokhandel
Fredsgatan 2
Stockholm

SWITZERLAND
Buchhandl. Hans Raunhardt
Kirchgasse 17
8000 Zurich, 1

Librairie Payot
6 rue Grenus
1211 Geneva 11

TURKEY
Librairie Hachette
469 Istiklal Caddesi
Beyoglu, Istanbul

UNITED KINGDOM
H.M. Stationery Office
P.O. Box 569
London, S.E.1

George G. Harrap & Co. Ltd
182 High Holborn
London, W.C.1

UNITED STATES
Manhattan Publishing Company
225 Lafayette Street
New York, 12—N.Y.

STRASBOURG
Librairie Berger-Levrault
Place Broglie

S.C.E.R.T., West Bengal
Library
Calcutta
25/3, B.C. Road

Form No. 3.

PSY, RES.L-1

Bureau of Educational & Psychological Research Library.

The book is to be returned within the date stamped last.

WBGP-59/60-5119C-5M

Form No. 4

BOOK CARD

Coll. No.............. Accn. No......

Author....................................

Title.......................................

Date.	Issued to	Returned on
....	....	....
....	....	....

371.3
TRI

105